

THE
Desert
MAGAZINE



OCTOBER, 1942

25 CENTS

LETTERS . . .

Trips for Rock Collectors . . .

Los Angeles, California

Dear Mr. Henderson:

My wife and I, like many of our friends, are ardent rockhounds and feel as though we are a part of Desert Magazine.

We all have as a common interest the deserts of Southern California. However, we find one fault with "our" magazine. There are too many articles on rock hunting to other states, especially Arizona. There, I admit, will be wonderful trips in the postwar period, but now due to rubber shortage our trips will be limited in length and regularity.

We sincerely hope that in the future there will be more articles on trips to points of interest for rockhounds of Southern California, at least a justifiable proportion, especially within 150 to 200 miles.

I believe the largest number of subscribers for "our" magazine are in the Los Angeles area, and they will probably feel the same way we do.

My personal best wishes for a continuation and enlargement of "Desert."

ENOS J. STRAWN

Dear EJS—You are right. Los Angeles is tops on our subscription list. But unfortunately Southern California isn't tops in the number of accessible gem hunting areas. Too many of the mineral areas are on privately owned property, which forbids our mapping them as field trips for the public. Arizona, Nevada, New Mexico and Utah offer the best opportunities for rock collectors. And since none of us are making many field trips these days—I can only suggest to collectors that they keep their magazines on file for the day when we again have the rubber to go as far afield as we like in the quest for specimens.—R.H.

Bouquets for the Living . . .

Taft, California

Dear Mr. Henderson:

I'm a verbose cuss when I get going, but that postscript was too brief. I've pored over nearly three volumes of "Desert," and every once in a while got fighting mad at some pernickety reader who objected to some feature and burdened you with a protest. I believe in bouquets for the living, and you and your staff have a big bouquet coming.

There isn't a feature I would want left out. Willie Boy and Mouse were part and parcel of desert history, their lives and deaths embodied in place names there.

"Here and There on the Desert" is a digest of all worth while news of mining, archaeology, reclamation, and biography. "Desert Place Names" is preserving history and tradition otherwise lost.

By limiting your poetry to desert subjects, some evanescent stuff gets into print, but much of it is worth while, and the early efforts of even the classical poets were not so hot. I have a typed anthology of fugitive newspaper and magazine verse, copied over many years, and "I'll Not Envy You" went into it.

Even to the reader not a rockhound, the field trips and data on minerals and gems are informative and interesting. To many of us, the new department by Quick will be invaluable. The articles on desert flora will give the faithful subscriber a real handbook of western flowers and plants.

The special articles by men like Woodward,

Harrington, and yourself are always interesting and beautifully illustrated. Through those stories dealing with personalities, I have vicariously met people I hope to some day meet in person, or renewed acquaintance with desert folk already met. And your "Quiz" is a cumulative encyclopedia of desert history and lore.

There is enough of beauty and interest in any number, that the over fastidious can skip what they do not like. The whole magazine is a desert gem, typographically, pictorially, and from every other angle. Don't change it.

Long life and prosperity to you, your staff, and "Desert."

W. H. IRELAND

The Navy Wins Again . . .

U. S. Navy, San Diego, California

Dear Sir:

You can imagine my surprise this morning when I opened your letter and out came a check for five dollars. You can rest assured that it will be put to good use. A little extra spending money in the Navy goes a long way. You have offered me a great deal of encouragement, as this is the first contest that I have ever entered. I have always been interested in the Southwest, and you can bet your bottom dollar when this mess is all over, I'll head straight back. After all the work of proving that this world is *round* instead of *flat*, I am beginning to doubt even that—I think that it is *warped*.

Thank you again for awarding me the first prize in this month's Landmark contest, I remain,

FRANCIS HAPGOOD ELMORE

More Light on Myrickite . . .

South Pasadena, California

Desert Magazine Editor:

In spite of hundreds of cut and uncut pieces of opalite with cinnabar having been sold as "myrickite," genuine myrickite is not opalite as evidenced by the following:

"Myrickite is a local name applied to chalcedony having blood-red spots and patches of cinnabar." From "Minerals of California, Bulletin No. 113, State Division of Mines."

and also this quotation from "Descriptive List of the New Minerals" by Geo. L. English, published 1939:

"Myrickite—A local trade name for a variety of chalcedony, showing red spots on a grey ground, resembling St. Stephen's stone."

Myrickite is a very rare mineral, and few collectors or dealers have ever seen it. It may be that what Mr. McIntyre refers to in his letter in the September Desert Magazine as "golden chalcedony" may have been "golden opal" since "Shady" Myrick found such a stone. His niece, Mrs. Anna Lightburn of Long Beach, California, came into possession of his collection at his death, and she gave me a small specimen of golden opal from the collection. It is the only one I have seen and it is probable that, like Myrickite, the occurrence was very limited. Even in Myrick's own collection there were only a few pieces of myrickite and golden opal. It is obvious that opalite, being less in hardness than myrickite, is not comparable to it as a semi-precious stone.

Trusting that the above will help to clear up the misunderstanding regarding myrickite, I am,

ERNEST W. CHAPMAN

An Invitation to Summit . . .

Honolulu, T. H.

Dear Sir:

When I came over here three months ago, I brought four copies of Desert with me. Needless to say they have become rather dogeared as I have read them from cover to cover several times, and passed them around to my friends who have enjoyed them immensely.

The last day I was in sunny Southern California (it rained all the time I was in Frisco waiting to embark), I made one last sojourn to our desert retreat—the summit of Cajon pass. Few people know of this unique retreat, except those who pass by on the trains, and then all they see is a street-car tucked away on the side of a hill, 200 yards from the tracks.

The street-car is the former Los Angeles railway's funeral car Descanso. A group of railfans, known as Railroad Boosters, became interested when it was known the car was to be scrapped, and decided something should be done about it. So far as we were able to tell the Descanso was the only funeral car in existence, and to delegate such an ornate car to the junk heap was not a very fitting end. The L. A. railway then told us that if we could find a place to put it we could have it as a sort of museum piece. After several months of scouting around, we decided on summit. On July 4, 1940, the Descanso was hauled up to summit by flatcar on the Santa Fe. Eight of us spent a very strenuous day unloading the car. It weighed 18 tons.

Three weekends were spent in getting the car to its present position, by the tedious process of laying a section of track in front, pulling the car up with a truck by means of block and tackle, then picking up the section in the rear, placing it up front again, etc. Then began the process of scraping off the old paint, removing the seats, and taking out a few of the unnecessary controllers, etc.

In the two years that have passed since its arrival at summit, the Descanso has gradually transformed from a dirty looking old streetcar, to that of a newly painted, well furnished cabin. From the exterior it still has the same general appearance of a streetcar as it still is on wheels on a section of rail, the trolley is still up, and still has the stained glass in the upper halves of the windows.

Quite a change has taken place on the interior though. Only two of the original seats are left in place with a folding table in between. A pot bellied stove, and a wheezy old phonograph well stocked with records, dominate the center of the car, while an icebox, a few chairs and another table and a small but complete kitchen take up the rest of the available space. Eventually we may put some folding bunks in one end, but due to material shortage, we content ourselves with sleeping on the floor in our sleeping bags.

We find it an ideal spot to go on a weekend, either as a home camp for a small hunting expedition, or for hiking up and down the railroad, the mountains, or just to lie around in the sun and watch the trains go by.

For anyone wishing to visit summit, just go up Cajon pass on U. S. 66 to Camp Cajon, and turn east (right if leaving from San Bernardino). This road is known as the back road to Arrowhead. It's about five miles from 66 to summit which can't be missed as the road leaves the twisting mountain road onto the level Summit valley road. Off to the left about a quarter of a mile is the railroad station of Summit with its scattering of section houses and the post office. The Descanso is directly behind the station.

In closing I wish to extend a cordial welcome to anyone visiting Summit, and wish I could be there and meet them personally. Until the war ends I've got to be content to visit the desert via Desert magazine.

ROBERT W. McGREW

DESERT Calendar

SEPT. 27-OCT. 4 New Mexico state fair, Albuquerque.

SEPT. 29-30 San Geronimo fiesta, traditional harvest festival of Taos Indians, and Taos county fair and livestock show, Taos, New Mexico.

OCT. (first week) Navajo Indian agency fair, Shiprock, New Mexico.

OCT. 1-25 Indian Country as shown in color photography of the late Harry G. Steele of Pasadena, at Museum of Northern Arizona, Flagstaff.

4 Feast Day of St. Francis de Assisi; procession on eve of St. Francis Day, Santa Fe, New Mexico.

4 Annual fiesta, Nambe Indian pueblo, New Mexico.

4 Annual fiesta, Ranchos de Taos, New Mexico.

10 Sierra club to weekend in Pinyon Flats-Asbestos mountain area, guests of Mr. and Mrs. P. S. Shumway at their summer home, L. J. Arnold, leader.

16-17 Searles Lake gem and mineral society hobby show, Trona school, Trona, California.

HUNTING SEASONS

Arizona—

Deer: North of Gila river, except Pinal mountains in Gila and Pinal counties, Oct. 16-Nov. 15; south of Gila river and including the Pinal mountains, Nov. 1-Nov. 30 on white tail deer; Nov. 16-30 on desert mule deer.

Turkey and Bear: Open north of Gila river only; corresponds to deer season.

Antelope: Sept. 19-Oct. 3 in 8 special areas. Permits from license dealers, game wardens, fish and game commission.

Dove: Sept. 1-Oct. 12, sunrise to sunset.

California—

Dove: Sept. 15-Oct. 12 in Imperial county; other counties start Sept. 1.

Nevada—

Deer: Opens Oct. 4, closes Nov. 2, except Nye and Esmeralda closing Oct. 30; Pershing, Oct. 31; Clark, Nov. 2; Lincoln north of Union Pacific tracks, Oct. 18, and south of tracks, Oct. 18-Nov. 2.

New Mexico—

Dove: Sept. 1-Oct. 12.

Pigeon: Sept. 16-Oct. 15.

Utah—

Deer: Oct. 17-27. For special post-season hunting and antlerless deer permits, write fish and game commission, 329 State Capitol Bldg., Salt Lake City.

Duck: Oct. 15-Dec. 23. Also wood duck, coot, geese.

Elk: 820 permits to be issued; applications must be filed with State Game Board by Oct. 3. Nov. 8-17. Drawing Oct. 10.



Volume 5

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RANDALL HENDERSON, Editor. LUCILE HARRIS, Associate Editor.

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Evening

By WILLARD LUCE
Blanding, Utah

Winner of first prize in Desert Magazine's August contest is this sunset view taken with a Brownie Special camera. Panatomic X film, no filter.



Taos Woman

By FRED H. RAGSDALE
Los Angeles, California

Second prize winner in the monthly photographic contest was taken in Taos Indian Pueblo, New Mexico, with a Rolliflex camera on E. K. Plus-X film, G filter.

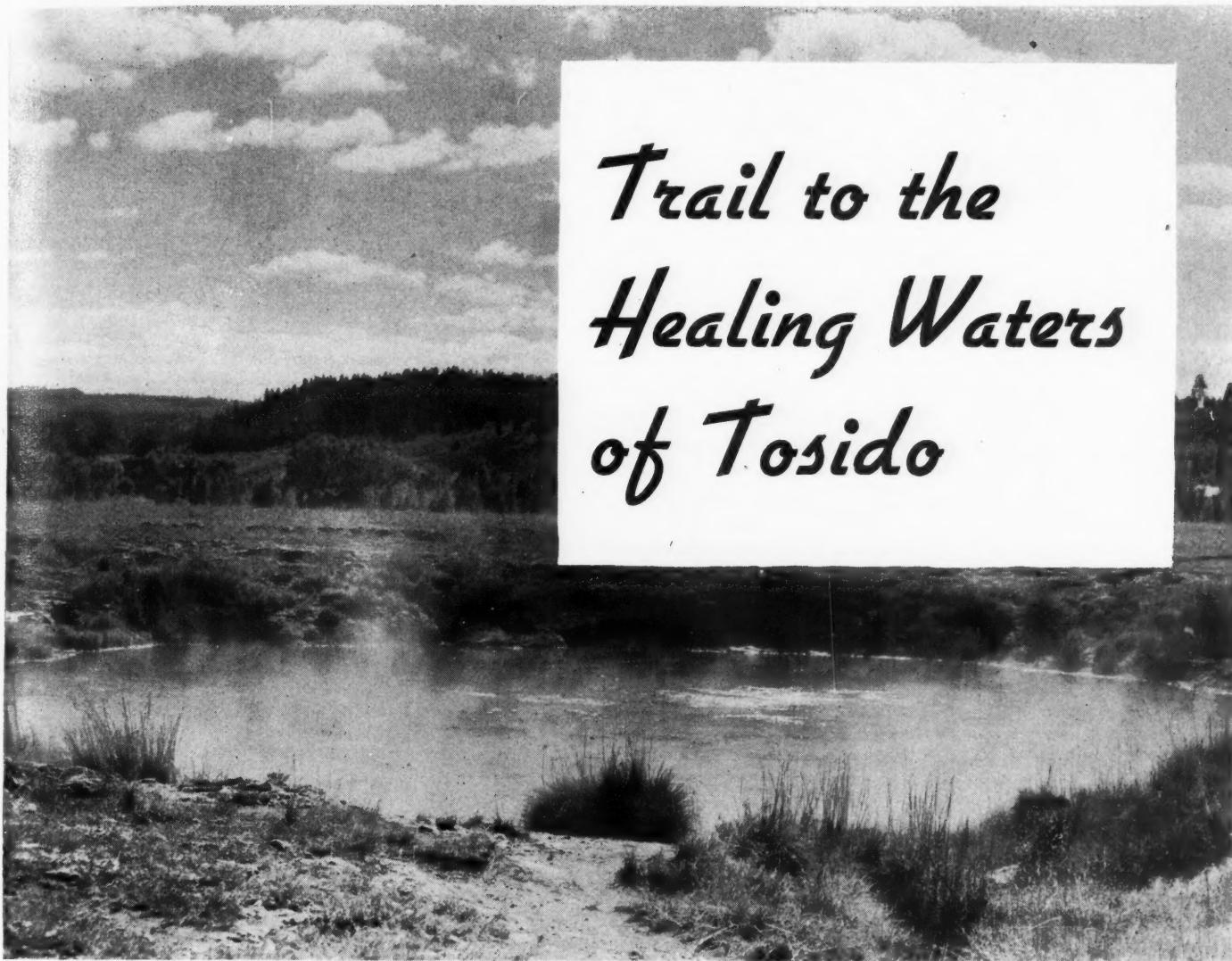
Special Merit

The following photos were judged to have special merit:

"Shadows of the Past," by Doris Priestley, Pomona, California.

"Gila Monster and Saguaro," by Glenn R. Knight, Tucson, Arizona.

"Baby Burro," by Fred H. Ragsdale, Los Angeles, California.



Trail to the Healing Waters of Tósido

Tósido, the healing spring of the Navajo—called by the white men Pagosa Spring. Photo by J. R. Lynn.

When Old Warrior, the aged Navajo, got a swelling in his knee and was too crippled to take part in a Purification sing, he asked his friend Richard Van Valkenburgh to take him to Tósido, the magic spring of healing waters. And here is the story of the trip to the legendary spring of the Indians—a place you and I know as Pagosa Springs, Colorado.

By RICHARD VAN VALKENBURGH

THE STACATTO bark of *Licba'ii*, the Camp Watcher, broke the hush of the summer evening when I arrived at the camp of *Hastin Hashke'e's*, the Navajo, perched on the sandy hummocks above Tódilil, the Smoky Spring. Southward the sacred mountain of El Huerfaño was a dusky lavender block rising above the sun-tanned plains of Gallego in northern New Mexico.

Welcoming me with the formal greeting reserved for old friends, *Hastin Hashke'e*, the Old Warrior, bade me enter. When I finished stringing out another tendril of the "grapevine news" from Window Rock, he told me why he had sent for me:

"In the season of the last 'Crusted Snow' my knee began to swell," he said. "People laughed when my old woman had to sit

me on *Telli*, the burro. We sent for *Hathli Tsosojib*, the Star Gazer. He looked into the heavens through his crystal. There was a bloody scalp across the moon trail. From this omen he divined that the *Chindib* of a Mexican I once killed was causing this sickness.

"The proper cure for this trouble would be an *Aaand'djib*, or Enemy Purification Rite. This is what you call a Squaw Dance. But such a sing would be too rigorous for me—one who has lived 10 winters beyond one old man's life. I have thought of something else.

"Far to the north under the blue peaks of the Sierra San Juan, there is a sacred spring called Tósido. When I was no higher than a willow shoot I rode there with my sick grandfather. He was cured. I am too crippled to ride that far. I want

you to carry me to Tósido, the Warm Water."

I hid my jubilation. *TOSIDO!* One of the water-shrines I had been hunting for. Navajo story-tellers had often mentioned this spring. During the "World Fire" set by mischievous Coyote, the water boiled up from the Underworlds. It was also here that the Twin War Gods purified themselves after purging the world of the 84 *And'ii*, or Enemy Monster People!

I gave no hasty answer—this would have been irregular to Navajo routine. Just before stretching out to sleep on the goat pelts I said, "La! We leave for Tósido in the early morning."

The screeching of *Yanibah*, the Old Warrior's wife, stirred us out into the early dawn. While Elder Sister poured us *k'óway* under the ramada I watched the older woman work. A calico-clad dynamo, she jawed and jostled the baaing sheep out of their corral. Following the tinkling bell of the lead-goat, they trailed upward to range on the mesa top.

When Elder Sister finished brushing and tying the old man's thin white hair into a neat queue we were ready to start.



On the way to Pagosa, Van Valkenburgh and the old Navajo stopped to inspect the ruins of one of the 18th century watchtowers of the Navajo tribesmen.

The schoolboy *Tuli*, was to go with us as interpreter. With a wave of his arm the Old Warrior directed us down the wagon trail to the north.

After passing through the gap where the white sands of the Canyon Blanco grind through the shelving scarps of the Mesa Cibola and Quartado, we came to the juncture of three box canyons. From

the east came the Canyon Campanero, the south, the Canyon Largo, and from the west, the Canyon Blanco. We were at the point where all join to drain off some 100 square miles of northern New Mexico. From here comes the bulk of the silty red water that eventually settles in Lake Mead back of Boulder dam.

Pursing his lips upward to where the

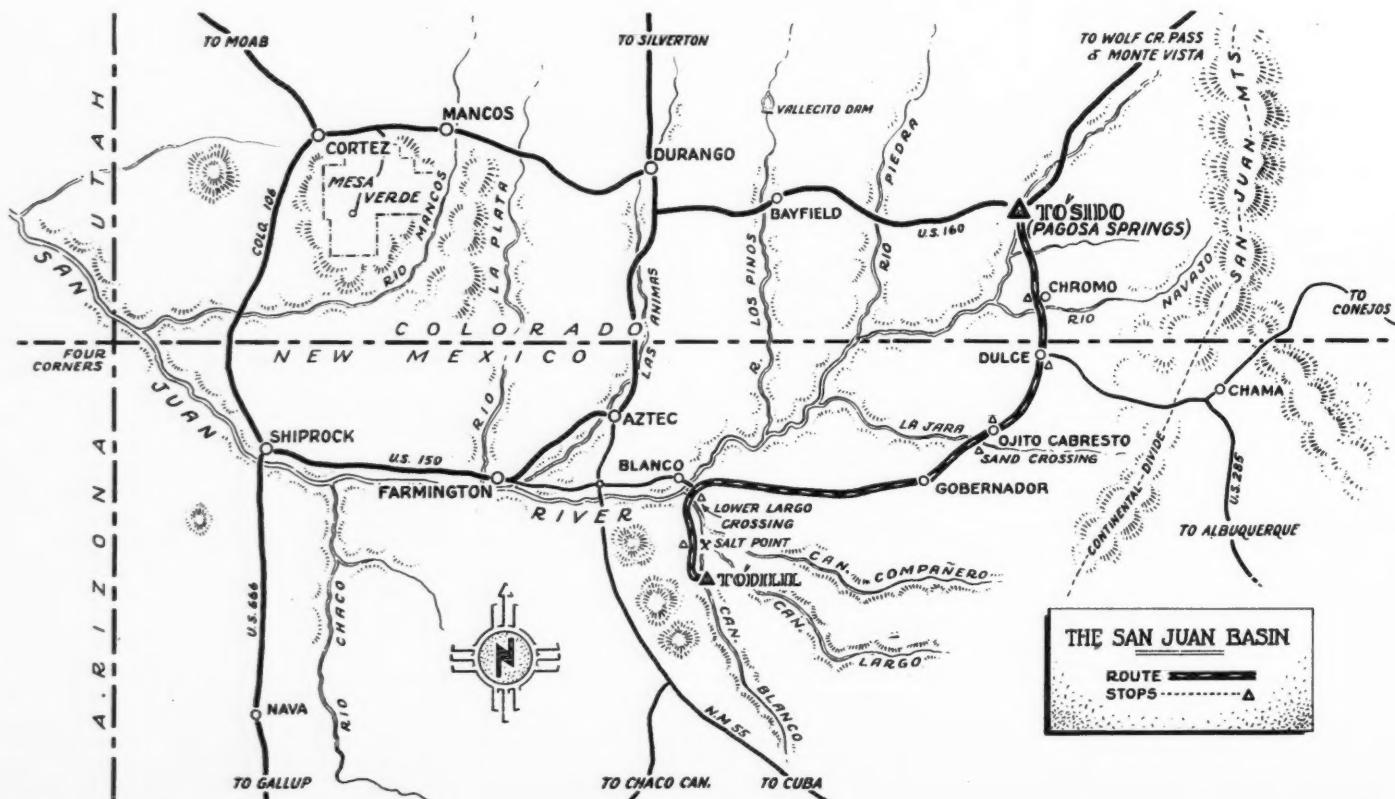
Mesa Cibola sheers off like a great spur, the Old Warrior grunted, "Ashiind'a," and went off into a jumble of Navajo. *Tuli* explained, "He say Salt Point. Long time ago—before white traders came, old time Navajo got salt up there."

Our trail led down the main Largo. Salt Point was behind us—a buff colored wedge jutting upward in the white flecked sky. Innumerable barrancas biting into the crumbly earth made travel hazardous. There was a gradual widening of the canyon floor. We made an abrupt left turn—the road jumped off into the main arroyo bottom!

The Old Warrior insisted on a "look-see." He had lost a fine burro "right there under the bank." To the east thunderheads were rising above the Continental divide. Without warning an avalanche of mud-laden water could burst into our sunlit world. They could as easily wrap us in their vortex as they do the barrel-sized mud balls they churn and cast out on the Largo delta.

Low gear growled as we broke the crust of the bank. We bounced across a quivering bed of quicksand. Our tires spun and threw a spray of mud. With a jerk we gained traction in the two tracks that wound across the powdery sand. Wide open we gunned across the quarter mile of the ill famed Largo crossing.

Following the east side of the canyon we soon reached the cobbled upper terrace of the San Juan river. The wide delta of the Largo was a vast triangle forcing its dirty brown base into the sparkling blue



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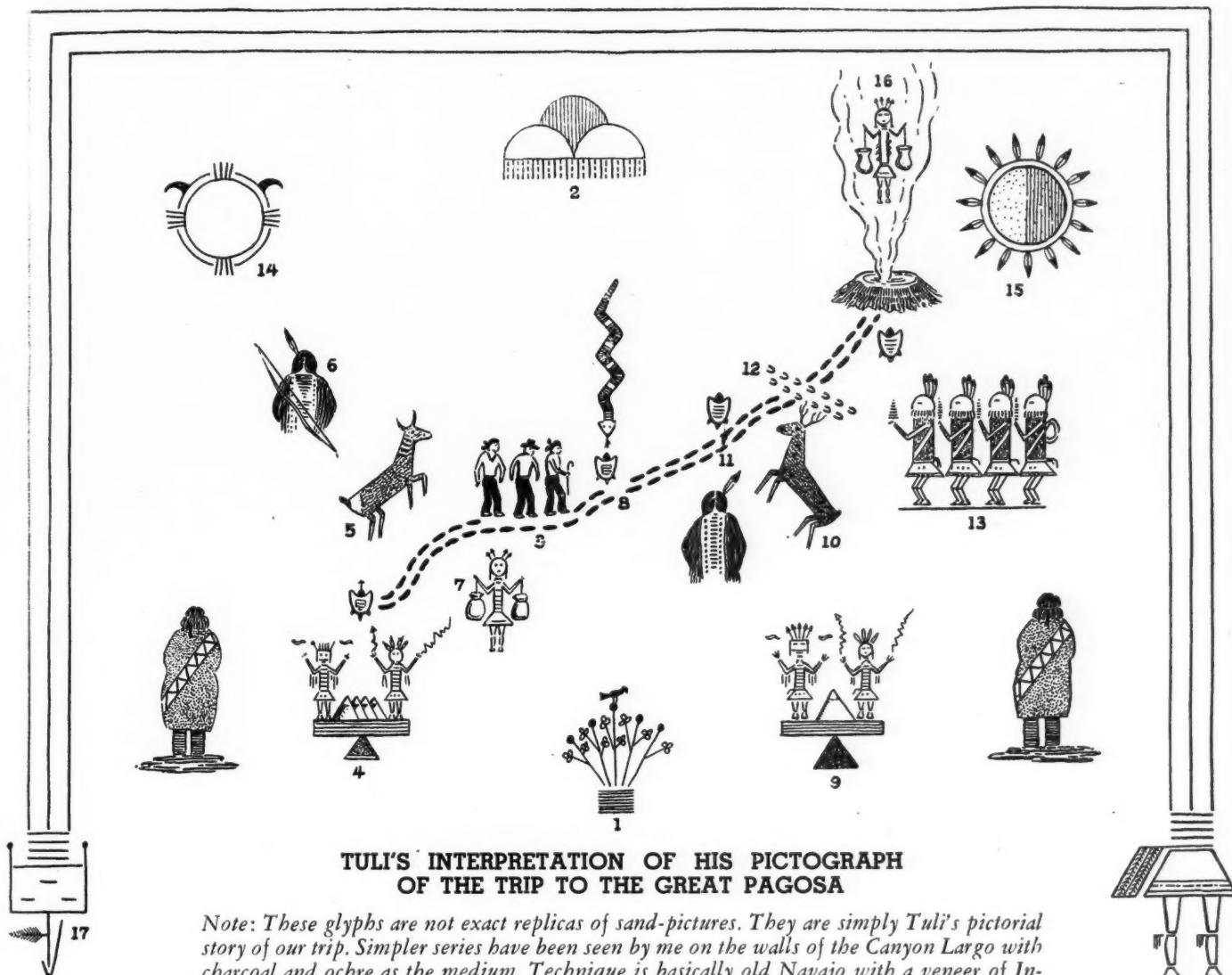
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TULI'S INTERPRETATION OF HIS PICTOGRAPH OF THE TRIP TO THE GREAT PAGOSA

Note: These glyphs are not exact replicas of sand-pictures. They are simply Tuli's pictorial story of our trip. Simpler series have been seen by me on the walls of the Canyon Largo with charcoal and ochre as the medium. Technique is basically old Navajo with a veneer of Indian school technique.—R.V.V.

The good-luck mountain bluebird on the redbud shows that it is summer time (1). One cloud in the vault of heaven carries rain (2). One crippled Navajo, a young Navajo, and a White Man leave Tódilil, the Cloudy Spring shown as a turtle (3). Turtle is Old People's sign for water. Looking down from Dzilna'odzili, the sacred mountain, are First Man and First Woman (4). Antelope once were common here (5). The Ute, our old enemies (6). Salt Woman carrying bags of salt at Salt Point (7). At Ojito Cabresto Hásidih Yazzi (Van Valkenburgh) broke Navajo taboo by killing a snake (8). Southward

was sacred Ch'ool'i'i, part time home of First Man and First Woman, and the birthplace of White Shell Woman (9). In the mountains east of Cabresto, Mexican Killer once killed a big buck and got a sacred buckskin (10). At Dulce we talked with our cousins, the Jicarilla Apache (11). Beyond there we crossed the Old Spanish mule trail (12). Ye'ii dancing the first Night Chant in the Blanca Basin (13). The sun was in the sky when we left Tódilil (14). The moon was up when we reached Tósido (15). Mexican Killer was cured for the Water People were still in the spring (16). Around all is the long rope of the Rainbow People (17).

waters of the river. Far below the 'dobs of Blanco village were white cubes set in the borders of deep green.

Going eastward on rough New Mexico State Highway 17 we climbed a series of tablelands that shelved upward towards the dim blue heights of the divide. Barefoot Mexican children shyly waved at us as we passed the lonely ranchos of San Rafael. As we rattled across the cattle-guards of Gobernador, white faced cattle hoisted their tails and stomped away.

After an hour we dropped down the

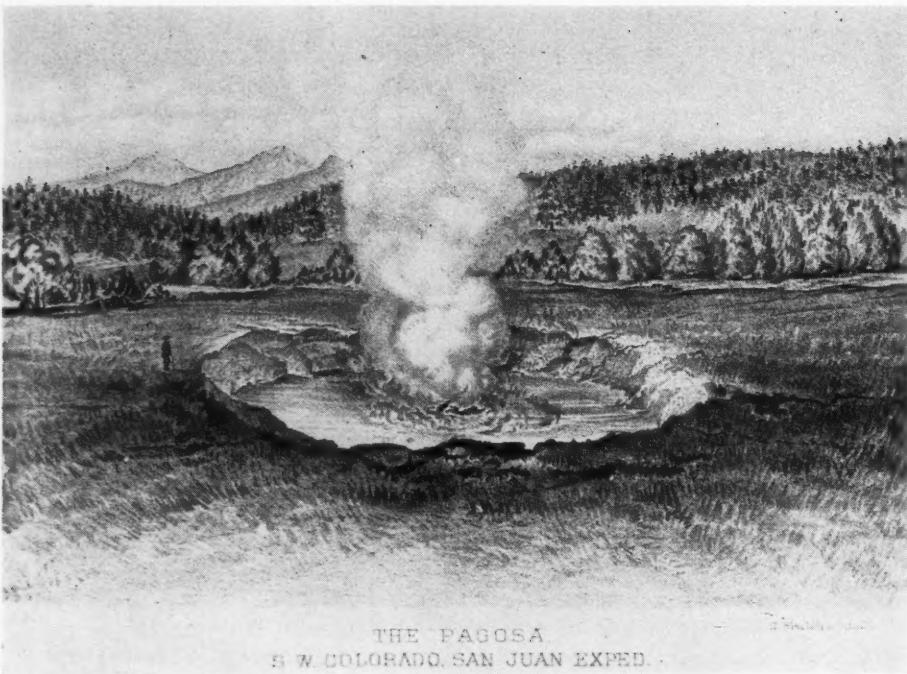
rocky grade that flattens in the wide bottom of the Canyon La Jara. The usually dangerous sand-crossing was easy. The bed had been moistened by a freshet. On the north bank the Old Warrior motioned me to stop by a grooved pine log catch-basin overflowing with moss fringed water.

Refreshed by a drink of the cool spring water the Navajo rested under a shady ledge while I scouted around. Just above the spring there was a crumbling 18th century Navajo watchtower. I started to pick

up pottery sherds. There was a whirr like the wind blowing through dry milkweed pods!

Coiled at my foot was a small rattlesnake!

Just as I was picking up a rock to finish him off, the Old Warrior and Tuli came around the rock. Tuli placed his hands over his eyes and quickly turned back. The old Navajo eyed me for a moment. Then he reproached me, "Doyachonda! Snake People get even. Bad luck for Tuli



THE PAGOSA
S. W. COLORADO, SAN JUAN EXPED.

This first picture of Pagosa Spring was made by the artist who accompanied the McComb expedition from Santa Fe in 1859.

to see. His wife have hard time with new baby. Good Navajo never kill snake!"

From the spring which the Navajo call the *Ojito Cabresto* the road clung to the shady south wall of the Burn's canyon. Beyond Vallecito we passed into the pine clad knolls and grassy parks of the Jicarilla Apache. A wide arc to the north brought us to the crystal waters of the laguna gleaming in the canyon above the historic Apache agency of Dulce, New Mexico.

Copper-hued Jicarilla, in their bright shirts and with braided hair dangling down below their 10-gallon hats, eyed us curiously as we drove up before the trading post. While I bought lunch squat women in blowsy calico mother-hubbards haggled over prices. The Old Warrior and *Tuli* got the news.

Both were bursting with information as we wound northward over red adobe hills. "Yes! Those *Baxah*, or Always Winter People, have changed a lot since the World Fire had separated them from the main Navajo tribe. They look funny, talk too fast, and backwards!"

On the low divide between the Dulce and the Rio Navajo, the Old Warrior stopped me. He pointed to a shallow, grass covered barrow that bisected our road. Sweeping his hand from east to west, he said, "Old Mexican's trail to the western sea."

The old Spanish Trail! Partially broken by Fathers Dominguez and Escalante in 1776, it soon became the major trade route between New Mexico and California. Each fall great mule caravans packed with Navajo and New Mexican blankets left Abiquiu in the canyon of the Rio Chama.

After skirting the southern flanks of the Rockies they came to the Green river crossing. Here they paid tribute of mules to Walkra, the Ute chief. Between the Rio Virgin and Las Vegas the whitened bones of many marked the trail across the dread "Jornada del Muerto." Beyond the western sierra lay the flowered vale of San Gabriel. Here they would rest and trade for California wines and China silks.

Soon after reaching the foaming waters of the Rio Navajo, the Old Warrior called for another halt. Breaking through the willows fringing the stream he hobbled to a stalky shrub tasseled with yellow flowers. Plucking the waxy green leaves he placed them in a flour sack. A species of *nicotiana*, they would be dried and smoked in cornhusks at some future ceremonial as *Dzilnato*, or mountain tobacco.

At Chromo, just across the Colorado line, our river road faded into the well graded Colorado State Highway 17. To the east the bald face of the 11,000 foot basaltic dome of Cerro Navajo towered above the uneven swell of the indigo forest. It was in this majestic mountain country of the "Rio de Nabajoo" that the historian, Father Zarate-Salmeron found the Navajo in 1600.

Beyond the river the Old Warrior led us upward through tangled thickets of mountain mahogany and oak to the crest of a rocky ridge. Pointing eastward to where the Rio Navajo cuts a white scoop in the mountains, he told, "The Canyon de Chelly in Navajoland took the name *Tsegi*, In the Rocks, from this place. Here also our ancestors held their first Night Chant, the masked dance of the *Ye'ii*!"

After the 100 miles of bumpy trail the pavement seemed feather cushioned. We breasted a low divide. Below lay the valley of the upper San Juan. While I watched the play of the deep shadows of the mountains on the blue river, I thought of what Captain J. F. McComb the explorer had written 90 years before:

"... there is scarcely a more beautiful place on earth!"

Trout fishermen were poised on rocks as we followed the grassy banks of the river towards the lower end of the sylvan vale. The stream took a southward sweep and faded into a gap in the low hills. We passed through pine-clad spurs. In the opening of the west the resort village of Pagosa Springs sloped upward from the rock bound north bank of the San Juan.

We crossed to the south side of the river. A grassy meadow swelled upward to a gentle cone. In the center a great cloud of steam rose and faded into the sky. Drawing nearer we could see that it rose from a pool of deep blue water that bubbled and seethed in a great crater of white rock.

"La! Tis *Tósido*, the Warm Water! Too many houses around. Name changed. Bad! Maybe good spirits in spring have run away?" grunted the Old Warrior as we pulled to a stop to make camp under the cottonwoods.

By the time supper was finished the clouds were agate spars floating in the blue half-light of twilight. Dodging the clutch of the dusky peaks of the San Juans they faded into the jet curtain rising in the north. After the Navajo rolled up in their Pendletons I went over to the spring to seek information.

Ute tradition supported by white history tells that they fought and won the spring from the Navajo over 100 years ago. The Old Warrior's ancient name of *Tósido* is now only in the memory of a few old Navajo. Today, it retains the name given by early explorers, Pagosa, the Anglicised compound of the Ute word "*Pa-kosaa*," the Healing Waters.

The Great Pagosa is now owned by J. F. Lynn. Some 25 years ago he perpetuated the Indian tenure by purchasing it with Osage Indian Oil money. Anasazih ruins in the vicinity as well as very ancient Navajo remains evidence that spa has been used by man well over 1,000 years.

I told Lynn the occasion for my visit. Guiding me down to the river bank he showed me two reed lined pools. In these seepages of the main spring, Navajo, Ute, and Jicarilla Apache still come from great distances to bathe. Indian taboo is still followed in that the men bathe in one pool while the women bathe in another.

By certified laboratory analysis the beneficial components of the Great Pagosa exceed that of the famed Sprudel spring at Carlsbad, Germany. When the 165 de-

gree water surges its 2500 gallons a minute into the white travertine bowl some 45 feet in diameter, the sodium, calcium, and lithia elements have been perfectly blended in the caverns of Mother Earth. The Indians knew their medicinal waters!

Four days the Old Warrior soaked in the pool. He was reluctant to return to Navajoland. Finally he compromised on a five gallon can of spring water. His knee was greatly improved—that would make him "feel like a young goat." We returned to Navajoland over the easier route home by paved U. S. Highway 160 and Durango, Colorado.

Four frosts whitened the peaks of the sacred mountains before I again saw the Old Warrior. News came of a Night Chant near El Huerfano. I reached the dance-ground for the masked dance of the ninth night. When I asked *Tuli* of my old friend, he laughed and answered, "Watch!"

Out of the powdery blue haze of the winter night came the mating call of the mountain grouse. The crowd fell silent. For it was the voice of *Hasjelti*, the Chief of the Gods. Fourteen blue-masked *Ye'ii* broke into the red glow of the eight fires crackling before the medicine hogan. They chanted:

"Haa, yaa Come up (all growing things)

Naa, Yaa Come down (the rain)."

"Look at *Tóinilini*," whispered *Tuli*. Identified by the water jug he carried, the "Water Pourer" stiffly pranced toward us. Keeping the tempo of the pounding rhythm the weird figure halted before me. His falsetto voice squeaked:

"All four directions
From above and below

Tóinilini, the Water Pourer
Walks in Beauty."

The quavering voice was familiar. *Tuli* laughed. "Yes! That's the Old Warrior jumping around out there. He dances in this "big sing" to thank the Gods. For they cured him in the waters of *Tóido*!"

CONTEST WINNERS TO BE ANNOUNCED NEXT MONTH

Names of the contestants who were awarded prizes in the "personal experience" contest conducted by Desert Magazine ending September 1, will be announced in the November issue.

The number of manuscripts received in this contest far exceeded the expectations of the editors, and many day's time will be necessary for members of the editorial department who are serving on the board of judges, to give a careful reading to each entry.

A first prize of \$25 was offered for the winning story, and \$10 for each of the other manuscripts acceptable for publication in Desert Magazine. The winning manuscripts will be published from month to month beginning in November.

TRUE OR FALSE

Settle back in your chair and relax—for here's Desert Magazine's monthly school of instruction for those who wish to learn how much or how little they know about the Great American desert. The questions cover many subjects, and do not be discouraged if you make a poor score—the fellow who made up this list spent 30 years learning the answers. If you are a rank tenderfoot, your score will be less than 10. A seasoned desert rat will average 15 bullseyes. If you get more than 15 you are either lucky or one of those super-humans popularly known on the desert as Sand Dune Sages. Answers are on page 47.

- 1—A coyote is strictly a vegetarian. True..... False.....
- 2—A mature Organ Pipe cactus is taller than a Saguaro. True..... False.....
- 3—Cedar Brakes national monument is in Utah. True..... False.....
- 4—Census figures show the Navajo to be the largest Indian tribe in United States. True..... False.....
- 5—North rim of the Grand Canyon is higher than the south rim. True..... False.....
- 6—In his historic trek to California in 1775-76 Juan Bautista de Anza led his colonists to San Gabriel through San Gorgonio pass. True..... False.....
- 7—Shipaulovi is the name of one of the Hopi towns in Arizona. True..... False.....
- 8—The sidewinder derives its name from the manner in which it strikes. True..... False.....
- 9—Visitors to the Saguaro national monument in Arizona occasionally see buffalo running at large. True..... False.....
- 10—Davis dam, now about to be constructed in Bullhead canyon, will be the sixth dam in the lower Colorado river. True..... False.....
- 11—San Ildefonso Indians are especially noted for the making of fine pottery. True..... False.....
- 12—The famous battle between the Earps and the Clanton gang was at Tombstone, Arizona. True..... False.....
- 13—The original 29 palms are still to be seen in the oasis at Twentynine Palms, California. True..... False.....
- 14—First American governor of New Mexico was General Stephen A. Kearny. True..... False.....
- 15—Mineral produced in the mines in Bingham canyon, Utah, is mainly gold. True..... False.....
- 16—Joshua trees grow as far north as Las Vegas, Nevada. True..... False.....
- 17—Papago children climb the Saguaro cactus to gather ripe fruit. True..... False.....
- 18—Gold is never found in quartz seams. True..... False.....
- 19—Mexican Hat, Utah, derives its name from a strange rock formation. True..... False.....
- 20—Elephant Butte dam is on the Rio Grande river. True..... False.....

Prizes to Amateur Photographers

Each month the Desert Magazine offers cash awards of \$5.00 and \$3.00 for first and second place winners in an amateur photographic contest. The staff also reserves the right to buy any non-winning pictures.

Pictures submitted in the contest are limited to desert subjects, but there is no restriction as to the residence of the photographer. Subjects may include Indian pictures, plant and animal life of the desert, rock formations—in fact everything that belongs essentially to the desert country.

Following are the rules governing the photographic contest:

- 1—Pictures submitted in the Octo-

ber contest must be received at the Desert Magazine office by October 20.

2—Not more than four prints may be submitted by one person in one month.

3—Winners will be required to furnish either good glossy enlargements or the original negatives if requested.

4—Prints must be in black and white, $3\frac{1}{4} \times 5\frac{1}{2}$ or larger, and must be on glossy paper.

Pictures will be returned only when stamped envelopes or photo-mailers are enclosed.

For non-prize-winning pictures accepted for publication \$1.00 will be paid for each print.

Winners of the October contest will be announced and the pictures published in the December number of the magazine. Address all entries to:

Contest Editor, Desert Magazine, El Centro, California.



Photograph by Ed. Read, Glendale, California.

THE DESERT SPEAKS

By W. EARLINGTON WHITNEY
Anza, California

Perhaps you may not know my strange allure—
Where stars are brighter and the air more pure;
Where sunshine heals, and Promise beckons
wide,
With thrill and satisfaction side by side.
Far lovelier than artist brush portrays;
My scenes endure, yet, changing as the days,
I bring anew to tired heart and soul
Enchanting raptures of the azured bowl.

Within my portals lie intrinsic worth,
Where Man may meditate on primal birth;
And in my long deep silence he may plan
The right regard for all his Fellow-man.

Oh weary soul, if you should wish to seek
Sweet solitude and beauty unsurpassed,
I bid you come where Nature is supreme
And realize a blessing that shall last.

TRIBUTE TO TRONA

By RUTH MCANALLY
Trona, California

I love the Trona desert
Its every bush and rock,
I even love the Potash dust
Within my curly locks.
The salt spray on the window
That dims the bright sunshine,
Can never dim the happiness
Or health that here is mine.
The lights and noise of the mill
Are my companions true,
I love the friendly attitude
Of all the people too.
Within my heart there's no regret
That my home is right here,
For work and health and happiness
Make heaven seem quite near.

Do You Understand?

MADGE MORRIS

"Have you slept in a tent alone—a tent
Out under the desert sky—
Where a thousand, thousand desert miles
All silent 'round you lie?
The dust of the AEON of Ages dead
And the PEOPLES that tramped by.
Have you looked in the desert's painted cup,
Have you smelled at dawn the wild sage
musk,
Have you seen the lightning flashing up
Have you heard the song in the desert rain,
(Like the undertone of a wordless rhyme)
Have you watched the glory of colors flame
In its marvel of blossom time?
Have you lain with your face in your hands
afraid
Face down—flat on your face—and prayed,
While the terrible sandstorm whirled and
swirled
In its sandy fury, and hid the world,
And quenched the sun in its yellow glare,
Just you and your soul and nothing there?
If you have then you know, for you've felt
its spell
The lure of the desert land.
And if you have not, then I could not tell,
For you could not understand."

CREED OF THE DESERT

By JUNE LE MERT PAXTON
Yucca Valley, California

Keep the wildness of the desert;
Keep its mysteries secure;
Keep it from this hellish conflict
That its peace may long endure.

PRAIRIE BACKFIRE

By SANDY KELLY
La Mesa, California

Oh give me a home on the prairie,
Where the coyotes yowl 'round my door.
Where the lizards and beetles tarry,
And the rattlers sneak up through the floor.
Where the hoot-owl hoots just at night-fall,
And the dove does a note all forlorn,
Where the scanty shade of the mesquite,
Bids you sit down, on a thorn.
Where the wind blows and sand flows about
you,
And you pick out the burrs from your hair.
While the pack rats come without warning
To steal what you've got put away.
Oh give me a home on the prairie,
I love it the best of all places.
'Neath a cactus I'd lie, when I die bye and
bye
Way out in the wide open spaces.

THE STRONG ONE

By LELA M. WILLHITE
Garvey, California

The mountains have no hold on me
Ah, but what of a desert land!
Spaces, golden silence, no tall tree
To cast a shadow on the sand.

The cities have no hold on me;
But any land in purple shown
Where mountains, bare and jagged, flee
Like swallows in a headwind blown.
Across some unknown distance flung
In vast, majestic mould!
A voice that has no sound has sung
On a silver lute, of the desert's hold.

Looking across through the shimmering heat waves that rise from the barren salt-encrusted surface of Searles lake on a summer day, you would conclude that it was not a very imposing landmark to bear the name of so worthy a pioneer as John Searles. But if you will go to the great chemical plant that stands like a mirage on the floor of the lake bed, and listen to the engineers telling about the wealth of chemicals extracted from the brine that lies beneath the crust of salt, you will realize that it is no mean honor to have one's name attached to such a storehouse of wealth as lies beneath the uninviting surface of this desert playa. John Searles passed away 45 years ago, but the mineral wealth he discovered is playing a tremendous role in industry and war in this year of 1942, as you will learn from Ora Lee Obersteuffer.

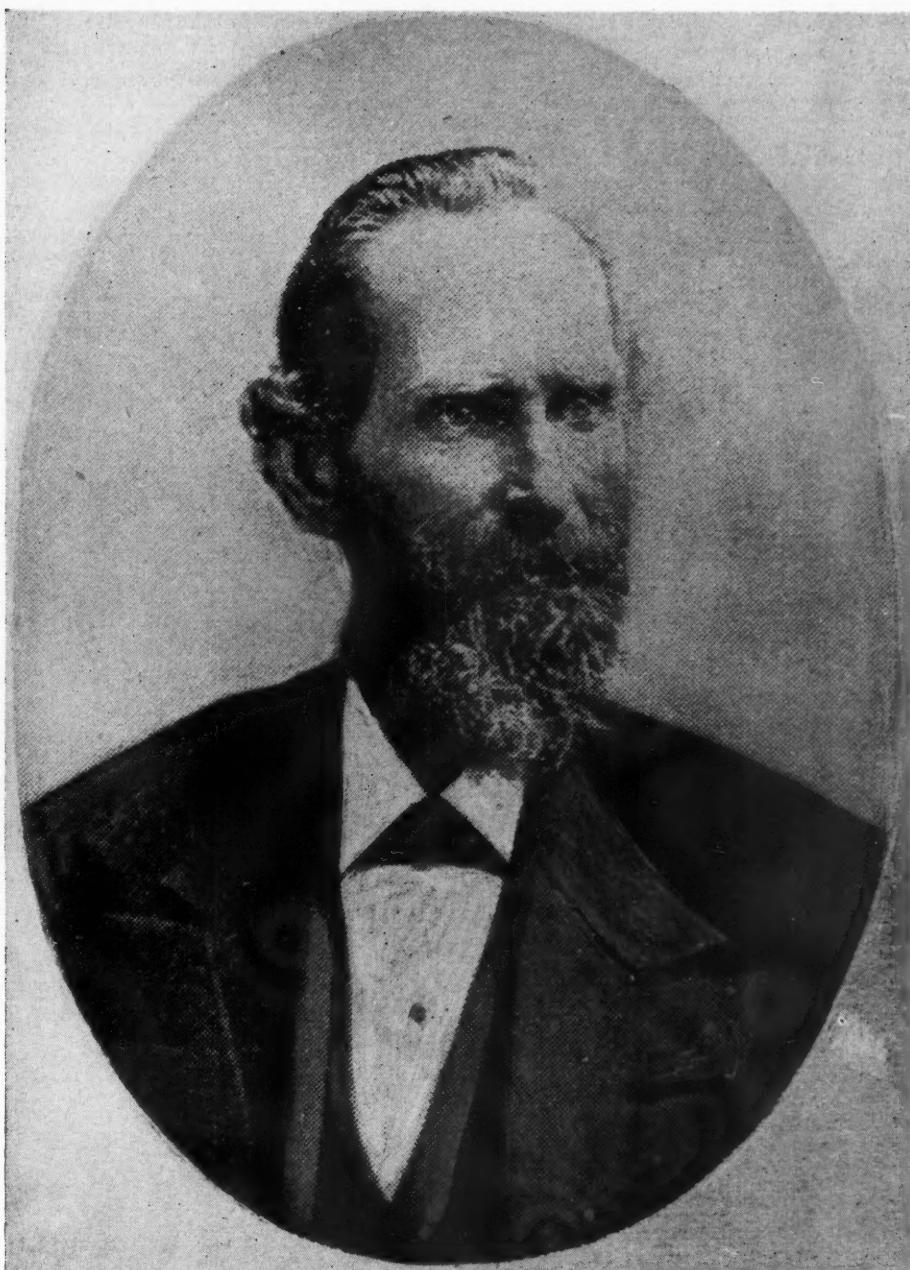
The Saga of John Searles

By ORA LEE OBERTEUFFER

HIGH up in the mountains which overlook Searles lake, at the head of a tortuous, rocky trail, lie the ruins of the old homestead of John Wemple Searles. In the march of time over 75 years have passed since that home was built, but in the still of the desert the deep canyon seems to echo the chant of Chinese coolies as they picked and shoveled away at the rocky hillside to build terraces and walls and develop a water supply.

Time and cloudbursts have almost obliterated the trail, and the buildings have crumbled away, but the mammoth fig trees and grape vines, still flourishing and bearing fruit, are living memorials to the courage and faith of one of the most colorful characters of early desert history.

John Searles was among those intrepid pioneers who endured hardship and pri-



John W. Searles—he came to California to hunt gold, and made a fortune out of borax.

vation to reach the California gold fields by way of the wagon train in 1849. Descending from ancestors who won renown with the American army in the Revolutionary war, the courage and fearlessness which he had inherited were his only possessions when he joined his brother Dennis at Indian creek, Shasta county, California. The two brothers cast about for a few years in farming and mining but eventually disposed of their holdings, and in 1862 acquired and began operating mining claims in the Slate range, just east of the present Searles lake in central California. Their camp looked out on a vast dry lake of what was thought at that time to be salt and carbonate of soda.

One day Searles, confiding in no one, gathered samples of crystals from the bed

of the lake and took them to San Francisco for analysis. At first he was told they contained borax. But after more trips to San Francisco and more analyses had been made, he was told that they contained not a single trace of borax. Disappointed, he returned to the desert where he devoted the next few years to working his mine and developing his homestead in the mountains.

One day in 1873 a man drifted into the Searles mining camp with some samples from a new borax discovery in Nevada. Realizing that they were the same type of crystals as the samples he had previously taken to San Francisco, Searles' interest in his own discovery was aroused once more. With a pack outfit he went to the south end of the lake and located 640 acres.



Later this acreage was increased to over 2,000.

Then he made another trip to San Francisco with samples. When he was told again that his crystals contain no borax he became suspicious. When he left San Francisco for Los Angeles he was followed, but while in Los Angeles he formed a partnership with Charles Grassard, Eben M. Skillings and his brother Dennis. While the other three gathered simple equipment for starting operations, Searles went in an opposite direction, camping and prospecting, still being followed. When he was able finally to elude his followers he joined his partners at the claims.

When word reached the outside world that there was borax in Searles lake, hordes of men came to stake out claims. Claim jumping and murder knew no law on that frontier but in time most of the claimants starved out and the claims were abandoned. One or two small organizations attempted to produce the borax as a paying industry but for one reason or another faded out of the picture.

With crude equipment Searles' little band collected borax in cowhide baskets

The highly chemicalized brine from beneath the dry surface of Searles lake has created a town of 2500 people at Trona.

and carried it to a large boiling pan where it was boiled for 36 hours. The solution was then run into vats so that the crystals could form on the sides. After drying it was put into 70-pound bags, loaded into 20-mule-team wagons and hauled to San Pedro, California, where it was transported by water to San Francisco. Thus the borax industry on the now famous Searles lake was born. Those wagons, built and operated for Searles by Oso Viejo, who, at the time of this writing is still living in Los Angeles, were the first 20-mule-team borax wagons ever put in operation. It was one of the Searles wagons that Salty Bill Parkinson, Searles' foreman, later drove across country for exhibition at the St. Louis exposition in 1904.

On January 1, 1873, Searles married Mary Covington in Los Angeles, California. On February 27, 1874, a son, Dennis, was born to them. But those were difficult years for the city-bred girl. Never inured to the rigors of desert pioneering, her mind wandered in the maze of primitive

hardships and lost its way. Though deprived of her help and companionship he continued, with the aid of a faithful old Chinese cook, to keep his small son with him and carry on his enterprises.

In the operation of his borax works Searles had accumulated considerable real and personal property—land, buildings, wagons, mules, horses and other equipment. On one occasion he had gone with the mule team shipment to San Pedro, leaving Dennis, then four years old, in the care of the Chinese cook. A few days after the wagon train had left camp there suddenly appeared in the distance, like a plague of locusts, a band of hostile Indians. Sensing the danger the old Chinaman quickly gathered some food and fled with Dennis into a nearby canyon in the mountains. The Indians closed in on the camp, burned everything that would burn, and drove the stock over the Slate range into the Panamint valley.

Sand storms in all their deadly fury are as nothing compared with the anger of

John Searles when he returned and beheld the ruins of all that he possessed. As soon as the Chinaman and Dennis reappeared he assembled the team, took the same drivers, and started back for San Pedro, stopping enroute to leave his two passengers in friendly hands in San Bernardino. At San Pedro they bought mules, old army saddles and repeating rifles, hired a small band of longshoremen from the docks, and returned to the desert to track down the Indians.

Searles caught up with them in the foothills of the Panamint mountains where a bloody battle ensued. The Indians were fighting with bows and arrows, and, as one of the survivors told later, they did not fear the white men, thinking that the arrows would mow them down while rifles were being reloaded. Many Indians were killed and wounded and the remainder fled in panic, leaving the livestock behind. Searles and his men drove the stock back into Searles lake basin where he began the heart-breaking task of rebuilding the borax works.

In later years the faithful Chinese servant enjoyed an annuity which had been established by Searles. He died in San Francisco's Chinatown 10 years after Searles

had passed on to his own reward. The son Dennis later attended Stanford university where he graduated in its first class with Herbert Hoover. He died in San Francisco November 25, 1916.

In the rebuilding of the borax plant a corporation was formed under the name of the San Bernardino Borax Mining company. About 60 men were employed. The borax was still hauled out by 20-mule-team wagons to Mojave, the then nearest railway station, where it was shipped by rail to San Francisco. With each load worth \$4,000, and a load going out every four days, the business produced a tremendous revenue, but rival concerns paid Searles and his associates such a handsome sum of money to discontinue operation that they closed down their plant in 1895.

At the time of the operation of Searles' plant geologists considered the surface deposit to be the largest supply of natural borax in the world. None of them, not even John Searles himself, dreamed that under the hard white surface of the lake was a subterranean brine and a vast stratum of crystals containing thousands of times more borax than was exposed on the surface, as well as many other salts and chemicals which were later to take their

place in the world of science, industry, agriculture and national defense.

When it was discovered that the underground lake also carried a vast potash content, the President of the United States, by a proclamation, withdrew Searles lake into a potash reserve. Congress shortly thereafter passed a leasing bill authorizing the department of the interior to lease the deposits of potash and other minerals in the lake, preventing private parties thenceforth from procuring it outright. This bill, however, did not disturb those claims which already had been patented, including the holdings of the San Bernardino Borax Mining company as well as those of the California Trona company, a subsidiary of Goldfields, Ltd.

In 1908 the California Trona company undertook to manufacture chemicals from the brine, but, for various reasons, found the going too tough and went into the hands of a receiver. The company lay practically dormant until 1913, when it again made the same attempt under the name American Trona corporation.

Between 1913 and 1916 various experimental processes were developed, tests were made, plants were built at enormous expense and promptly abandoned.

Night pictures of the American Potash and Chemical plant at Trona, California.



History does not record whether those trying years proved to be a death struggle for the processes previously used or labor pains of the new Trona which was about to be born, but finally, in 1916, a plant to produce potash and borax by what was known as the Grimwood process was completed and placed in operation.

Ten wells, about 85 feet deep, were drilled through the salt crust and into the brine. A pumping plant was installed and a pipeline constructed to carry the liquid to the plant where the chemicals were extracted by means of evaporation. This plant was the real beginning of the present Trona. Production of salts from the brine by the American Trona company, and its successor, the American Potash and Chemical corporation, has been continuous since that time.

The variety of the uses for Trona products seems to be as unlimited as the universe. The coarse grade of potash is used chiefly in fertilizers. The finer grade is used in the manufacture of soaps, textiles, matches, medicines, dyes, glass, photographic preparations, and many other things.

One grade of borax finds its way into heat-resisting glasses, ordinary bottle glass, and vitreous or porcelain enamels, glazes for ceramic ware, leather, paper, adhesives and textiles. It is used as a solvent for casein, as a flux in the brazing and welding of metals, to retard the decay of citrus fruits, and to prevent the growth of certain fungi which cause sap stain in numerous types of lumber.

Boric acid (technical) is used in the manufacture of vitreous enamels, heat-resisting glass and glazes for ceramic ware. It is also used in electro-plating and the manufacture of electrolytic condensers. More highly refined boric acid goes into various pharmaceuticals and cosmetics.

Soda ash is probably the most versatile of all the products obtained from the Searles lake brine. It becomes baking soda, drugs, dye-stuffs, caustic soda, and other salts containing sodium as the base. It softens water, helps in the refining of lubricating oils, is an ingredient in wood preservatives and is a useful element in the manufacture of paper.

Salt cake (sodium sulphate) is largely used in the manufacture of kraft paper, plate and window glass, dyes, chemicals, tanning, cattle dopes and pharmaceutical products.

The youngest brain-children of the research department are the recovery of lithium from the process foams and slimes which formerly were wasted and the recovery of bromine and alkali bromides from the potash. Heretofore lithium has been obtained by mine production of minerals. As prepared at Trona it constitutes the highest grade lithium ore yet known.

In addition to a great many medicinal uses lithium chloride is used in air-conditioning units for de-humidifying, in metallurgy for copper refining, in the red fire of fireworks, and for many chemical experiments. Bromine and the bromides are largely used in modern industrial arts. It is a vital constituent of Ethyl gasoline as well as a fumigant for preventing weevils and damage to stored supplies of grain. The bromides are used also in the photographic industry. In a national emergency the photographer and his supplies as well as the Ethyl gasoline used in aeroplanes become of utmost importance.

And the end is not yet! The axiom in the old riddle "the more you take, the more you leave" must have been said of the brine in Searles lake, for, in spite of the enormous amount pumped out each day, scientists claim that it constantly is being replaced and that there is no indication that the supply will be diminished for at least 100 years. And so, judging the future by the past, who can say what additional wonders for the benefit of all mankind are still lurking in that brine?

The village of Trona resembles, to some extent, an army post. Where once there was a pitiful little handful of rude cabins on the edge of the salt beds there are now hundreds of modern comfortable homes on well-laid-out streets. There is a fully-equipped grade and high school, a public library, a modern up-to-the-minute hospital with two doctors, a corps of nurses and a dentist; a moving picture theater, an 18-hole golf course, and a completely-equipped trapshooting ground. It also boasts an airport with hangars for a number of privately owned planes, as well as one of the finest open-air swimming pools in the West.

A large and commodious retail store carries food, dry goods and drugs. In the early mining days of John Searles it was necessary for him to drive his mule team over 100 miles to Tehachapi for his supplies and feed for his stock. Later he ran a small store of his own for the benefit of the employes in his borax works. The ruins of that little store building are still standing on the shore of the lake.

In contrast to the 20-mule-team wagons which groaned and creaked their way across the desert in the early days of John Searles, the American Potash and Chemical corporation now owns and operates its own railroad between Trona and Searles station, a distance of 31 miles, where it connects with the Southern Pacific railway. Two huge engines, piloting an average of 35 cars, now puff out of Trona every day starting about 1,300 tons of products on their way to every corner of the globe.

There are now 19 wells operating on the lake and an average of 2,700,000 gal-

lons of brine flow through pipelines into the plant every 24 hours. From this brine approximately 1,260 tons of chemicals are extracted. To carry on this herculean chore, with loading and shipping, requires about 1,250 employes, who, with their families, constitute the entire population of Trona, numbering about 2,500.

With Trona products taking such an important place in the scientific and industrial world, it is not surprising that the interesting little city has gathered unto her bosom a most unusual class of people. It boasts some of the finest chemical and engineering brains in the country.

Houses, administration buildings, store buildings and dormitories for single men and women are all air-cooled—almost sufficiently comfortable in the hottest summer weather. It's a far cry back to those pioneering days when there was no relief from the dancing, baking heat waves of the lake basin.

John Wemple Searles, son of George and Helen Wemple Searles, was born at Tribes Hill, Montgomery county, New York, on November 16, 1828. Though the glittering, shimmering borax crystals in the bed of the lake which now bears his name were not the yellow gold which he expected to find at the end of the covered wagon trail, they made him a rich man and left a legacy of benefits and blessings to be enjoyed by the whole world for generations to come.

History records that in his early pioneering days, while on a deer-hunting expedition into the mountains of Kern county, Searles had a grueling, breath-taking fight with a huge grizzly bear which left his shoulder and one side of his face permanently mangled. Companions on the hunt managed to get him to Los Angeles where surgeons miraculously saved his life. Grim reminders of the incident today are a bottle containing 21 pieces of broken bone and teeth and an old Spencer rifle with many bear-teeth dents in it. Perhaps only the kind of pluck and courage which saw him through that encounter could have fought off claim jumpers and marauding Indians in his early borax days and establish for posterity one of the most important industries in America today.

John Searles died on October 7, 1897, and his body lies in the purple shadows of the little cemetery at St. Helena, California. But to watch the sun sink behind the hills at Trona and the short twilight fade into night, with the silhouette of the huge industrial giant outlined in black against the desert sky—then suddenly a million electric lights rivaling the long jagged points of the stars—one feels that his spirit has come back that the desert may claim its own; that here indeed death has been swallowed up in victory.



The glitter of gold still lures prospectors to Glen Canyon of the Colorado. This photograph is of the prospector whose life was saved by Kelly's party, as narrated in the story "Gold Hunters Are Like That" in July, 1942, Desert Magazine.

By CHARLES KELLY

"... The two fellows with Capt. Dodds are miners and are seeking gold in the canyons of the Colorado and therefore want to see the Major about it. One of them showed us how to prospect by getting a few grains of gold out of the sand. Claims that somewhere among the rapids he can scoop up gold by the hatful and is bound to try it."

The above entry from the unpublished journal of William Clement Powell, a nephew of Major John Wesley Powell, was dated October 6, 1871. Young Clem Powell, assistant photographer for the Major's second expedition through the canyons of Colorado river, made the entry at Crossing of the Fathers, 40 miles above Lee's ferry, where the river expedi-

tion was met by an overland party under Captain Dodds, bringing fresh supplies.

So far as I know, this is the first mention of gold being found along the Colorado river.

Clem Powell states that the two prospectors were named Riley and Stevenson. They had accompanied Captain Dodds for the purpose of questioning Major Powell about the possibilities of finding gold along the river. Since Powell was first to pass through the canyons of the Colorado, they supposed he must have found rich deposits of gold bearing sand. They had heard tales of Indians scooping up gold by the hatful and hoped the Major could direct them to the spot. But Major Powell was a geologist and explorer, not a prospector. If he knew there was gold along the river he never mentioned it.

Riley and Stevenson did find flakes of

For more than 70 years prospectors have been panning the bars along the canyons of the Colorado river for gold. Gold is there—billions in wealth—but it is flour gold in such fine particles that few miners ever have been able to mine it profitably. In this story, Charles Kelly tells of some of the failures—and of the two men who have continued to operate after all others abandoned their claims.

River Gold

fine gold in the sand at Crossing of the Fathers, but not in paying quantities. Returning to Kanab with Captain Dodds, they were joined by another man named Stewart, and in January, 1872, Clem Powell found them busily placer mining at the mouth of Kanab creek, in Grand Canyon, where they were very hopeful of making a rich strike.

That was 70 years ago. Almost every year since then prospectors have panned the sands of Colorado river searching for the place where gold could be scooped up by the hatful. As a matter of fact gold can be found anywhere along the river from its two principal sources in Colorado and Wyoming to its mouth in the Gulf of Lower California; but the original source of the metal is unknown and the particles are so fine they will float on water when dry. No successful process for extracting this flour gold yet has been devised. But the gold is there—billions of dollars' worth—and this demonstrated fact has continued to lure prospectors to the river ever since Powell's second expedition.

In April of 1942, Dr. Russell G. Frazier, Willis Johnson and the writer made an expedition through the section known as Glen canyon of the Colorado, in three rubber boats. Our purpose was to search for some reported Spanish inscriptions on the canyon walls, said to have been left by Father Escalante and other early Spanish expeditions. In our search we stopped at every point along the river where such inscriptions might have been left. Unfortunately, we found no new inscriptions. But we did find, all the way from the mouth of Fremont river to Lee's ferry, evidences of the enormous amount



Dr. Russell G. Frazier and Willis Johnson inspect an attractive stone cabin built on Shock bar by a prospector who evidently expects to return some day.

of money and energy that had been spent in trying to recover the fine river gold.

Cass Hite, Colorado river hermit, seems to have been principally responsible for the gold rush in Glen canyon. In 1883 he built the first permanent residence along that isolated section of river, near the mouth of Trachyte creek. Once or twice a year he would ride out to Hanksville, nearest Mormon settlement, for supplies, bringing a few ounces of fine gold dust.

In 1889-90 Robert Brewster Stanton made a survey of Colorado river canyon with the fantastic idea of building a railroad through it. He found gold and in 1898 promoted a company to recover it. A huge dredge was built and transported in sections, by team and wagon. Coming at the time of the Klondike excitement, this activity precipitated a real gold rush and Glen canyon was soon lined with placer miners. A group of tents and shacks sprung up around Hite's old cabin, and Hite postoffice was opened.

There was no gold on bedrock in the river channel, so the \$300,000 dredge, which was never designed to recover flour gold, was abandoned after a few months' unprofitable operation. Other operators, who followed Stanton with every imaginable kind of equipment, were also compelled to quit. One by one the men with gold pans, sluice boxes and rockers gave up, the postoffice was closed for lack of business, and Cass Hite was left almost alone. Since then other men with various schemes for saving flour gold have conducted costly experiments; but none were successful, and the river banks in Glen



money and labor had been spent in transporting and erecting the wheel, but operations apparently had been abandoned after a short time. We cooked supper that night over a fire of old dry boards brought in on the back of a mule.

Next day we dropped down to California bar, which seems to have been the richest spot in the canyon. Near the lower end we saw a tent-covered float and



This is the wreck of the Stanton dredge, resting on its own little island in the Colorado opposite the mouth of Bullfrog creek. Built in 1898 it operated only a short time and was abandoned.

canyon are lined with rusting machinery of every description.

On this voyage, our fifth through Glen canyon, we found the river high and the current swift. Late in the afternoon of the first day we were caught in a rainstorm accompanied by a strong upstream wind, making it impossible to handle the light rubber boats. Passing Olympia bar we were swept toward the east bank and carried underneath the remains of an enormous old water wheel hanging suspended from a high, sheer rock wall. Since most of the paddles had been torn away by floods we escaped being wrecked. Pulling in to shore just below, we found refuge from the rain under some overhanging ledges, where we spent an uncomfortable night.

The Bennett Wheel, as this piece of engineering is known, was built about 40 years ago. Its heavy timbers, cables and pumps were brought to the river by wagons and pack mules, over the roughest country outdoors, and suspended over a cliff where it was supposed to provide power for pumping water to the top of a high gravel bar containing gold. On the bar above we found deep trenches and pits, mine cars and rails, heavy iron conduits and a miscellaneous collection of rusty machinery. An enormous amount of time,

stopped to investigate. Here we found Charley Gearhart and his son Albert, the only placer miners now operating on the river. Gearhart is a mechanical genius. Starting with the wreck of an old car and a gasoline pump he has built, from the rusty debris of earlier unsuccessful operations, a drag line, a dump truck, sluice boxes and other necessary equipment. It is primitive, but strangely enough it works. His gold bearing sand, taken from an old working abandoned 40 years ago, is hauled to the river bank in a dump car and run through a long sluice box. His concentrates consist of black sand and flour gold, which he carefully pans out in clear water. By working a pan of concentrates Gearhart proved to us that "there's gold in them thar sands," but it requires an enormous amount of hard labor to recover it. The Gearharts are not getting rich, but they have succeeded, by persistent hard work, in making a living where all others have failed.

Below California bar, in the middle of the river, stands the wreck of Stanton's \$300,000 dredge. A sandbar has formed around it, creating an island in low water. The rusty old wreck is covered with driftwood collected in flood season. It is the most conspicuous monument in Glen canyon to man's unfruitful search for gold.

Stanton apparently did not know that most of the river gold lies in high gravel bars along the banks, deposited in prehistoric times.

Further downstream, at Shock bar, we found, near the river bank, an attractive stone cabin and a large tent. The place had been abandoned only a short time. The cabin, built against a sandstone cliff by some man with considerable architectural ingenuity, had the appearance of permanency. A nearby spring, piped to the cabin, provided a stream of clear, cold water which irrigated several young fruit trees, a thrifty grape vine and some rose bushes. On the gravel bar above were evidences of considerable placer workings, most of them old, with the usual accumulation of rusty iron and rotten lumber. The man who built this attractive cabin no doubt intends to return to it some day and spend his declining years, like Cass Hite, on the river where a few ounces of fine gold will provide all his actual necessities.

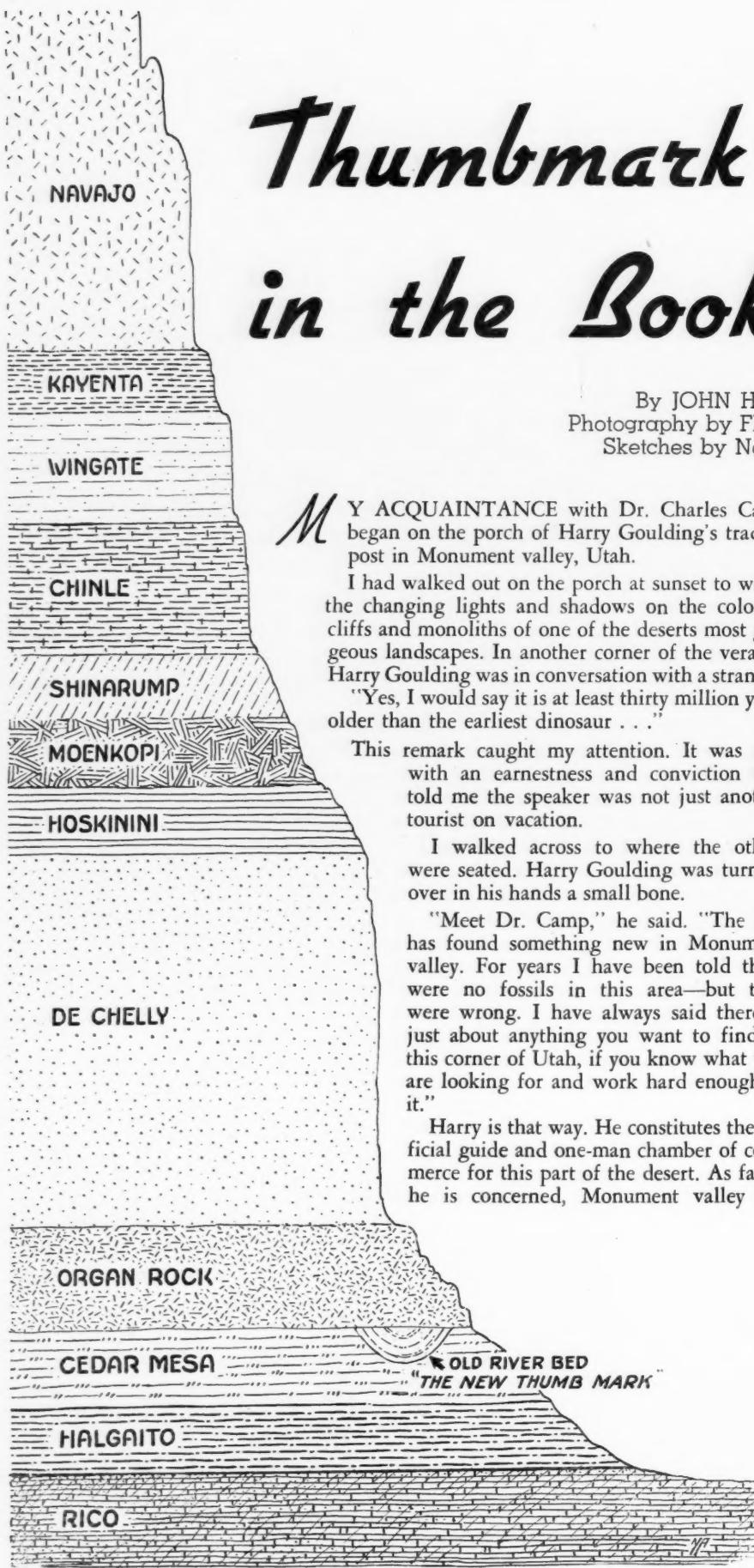
All the way to Lee's ferry, a distance of 185 miles, we saw, high on the river banks, little rock monuments marking old abandoned mining claims. On every bar we found old placer workings, sometimes with rotten sluice boxes still in place. Millions of dollars and an unbelievable amount of human energy must have been spent trying to recover some of the millions of ounces of flour gold in the old gravel bars, but probably only a few hundred ounces ever were saved, and always at a loss. Of the thousands who once lined the river banks, only Charley Gearhart and his son remained to remind us of the Glen canyon gold rush of 1898. They don't expect to find gold by the hatful, but they do make a living, and they like it. Somehow we envied them.



All that remains of the Bennett wheel on Olympia bar. This machinery was packed in piece by piece 40 years ago to wash gold bearing gravel. It never operated profitably, and soon was abandoned.



Camp of Charles Gearhart and son, Albert, on California bar. With this outfit constructed mainly of junk, the Gearharts make a living where thousands of other placer miners have failed.



Artist's cross-section of the geological formations in the Monument valley area. The Cedar mesa stratum is estimated to be 300,000,000 years old. Other sandstone formations have been laid down during the intervening years.

Thumbmark in the Book of Time

By JOHN HILTON
Photography by Floyd B. Evans
Sketches by Norton Allen

MY ACQUAINTANCE with Dr. Charles Camp began on the porch of Harry Goulding's trading post in Monument valley, Utah.

I had walked out on the porch at sunset to watch the changing lights and shadows on the colorful cliffs and monoliths of one of the deserts most gorgeous landscapes. In another corner of the veranda Harry Goulding was in conversation with a stranger.

"Yes, I would say it is at least thirty million years older than the earliest dinosaur . . ."

This remark caught my attention. It was said with an earnestness and conviction that told me the speaker was not just another tourist on vacation.

I walked across to where the others were seated. Harry Goulding was turning over in his hands a small bone.

"Meet Dr. Camp," he said. "The doc has found something new in Monument valley. For years I have been told there were no fossils in this area—but they were wrong. I have always said there is just about anything you want to find in this corner of Utah, if you know what you are looking for and work hard enough at it."

Harry is that way. He constitutes the official guide and one-man chamber of commerce for this part of the desert. As far as he is concerned, Monument valley has

everything—and he'll argue the point with you.

He handed me the small bone, and Dr. Camp continued explaining why its discovery was so important.

"We must search for more of these bones," he was saying. "I am sure they represent one of the earliest reptiles on the American continent—perhaps the first vertebrate life to leave the water and dwell on land."

The bone itself was not impressive. It was a vertebra and might have been part of a dead lamb if one failed to note that it had turned to stone, with particles of Monument valley red sandstone clinging to it.

"Note how primitive it is," said the doctor. "See where the nerves came through. It is just one step above the *Cotylosaur*."

I could see the indentures he referred to, but for the life of me I could not tell why it was so primitive, or related to a beast with such an odd-sounding name. But paleontology is a fascinating study, and so I tried to look as intelligent as possible. And that is the trouble with professors. When they find I am really interested, they take it for granted I understand everything they are saying—and I soon get tangled in a hopeless jungle of words that are utterly meaningless as far as I am concerned.

I asked how many bones he had found so far. The doctor shook his head thoughtfully. "Not nearly enough," he answered, "but we are going to keep looking. This is our third trip into this country, and each time we are able to piece together a little more of the story. I have a good crew of students this year. They are no less interested than I in getting a good picture of these creatures, and the kind of country this must have been at that early time."

I asked if there was any chance of finding a complete skeleton. He shook his head doubtfully. He explained that the few bones they had found were along the



Dr. Charles Camp of the University of California and the boulder in which the ancient reptile's skeleton is embedded.

course of an ancient streambed which he had traced through the base of one cliff after another. Complete fossils, it seems, are hard to find where water action has scattered the bones before they were covered up.

"Of course there is always a long chance," he said. "But the law of averages is all against a complete skeleton in this sort of terrain. When these Pelycosaurs and Cotylosaurs were alive, this country was a desert of drifting sand, with here and there a water course. If the animal died along the streambed high water would scatter the bones. If it died in the sand dunes the wind would do the same thing. We did find some excellent footprints, however. Want to see them?"

In a few minutes we were in the bunkhouse where his crew was quartered. Some of them were college boys out on this trip to gain a practical knowledge of paleontology. A few were from high school. All of them figured this would be their last field trip as civilians. They would be in Uncle Sam's uniform on their next field expedition, somewhere around the globe. They were a cheerful lot and full of good natured banter. It was evident they felt a deep respect for Dr. Charles Camp and the work he is doing in the department of paleontology at the University of California.

They were searching for bones with the eagerness of gold prospectors. The slab of



Close-up of the Pelycosaur skeleton discovered by Dr. Camp's boys. This reptile was a grand-daddy of the dinosaur.

rock with five-toed lizard tracks was one of their prizes. One could see where this ancient reptile had crawled across a mud bar on the stream bank.

I chided the boys for their failure to find a complete skeleton of the lizard they were seeking. But they were optimistic. Dr. Camp had promised the crew a steak dinner if they found the skeleton, and they were sure they would win the dinner.

They invited me to join them in the hunt. It sounded interesting—hunting for the skeleton of the dinosaur's grand-daddy out there among the red buttes of Monument valley.

Next day I spent with Floyd Evans and Harry Goulding photographing some of Harry's Navajo friends. Harry would drive his car over a red sand dune and down through a dark canyon, and by some sort of magic produce a Navajo hogan in a cove where you wouldn't believe a human could exist. They were all friends of the trader, and this made the picture tak-

ing easy. We were so interested we had almost forgotten about the lizard-hunters when we returned to the trading post.

It was evident something important had happened during the day. The camp was buzzing with activity. Dr. Camp met us at the bunkhouse door. He had a smile like the cat that had eaten both canaries.

"We've found it," was his first remark. "A completely articulated skeleton of a Pelycosaur, embedded in a slab of sandstone in probably the exact position in which it died."

He went on to explain how two of the

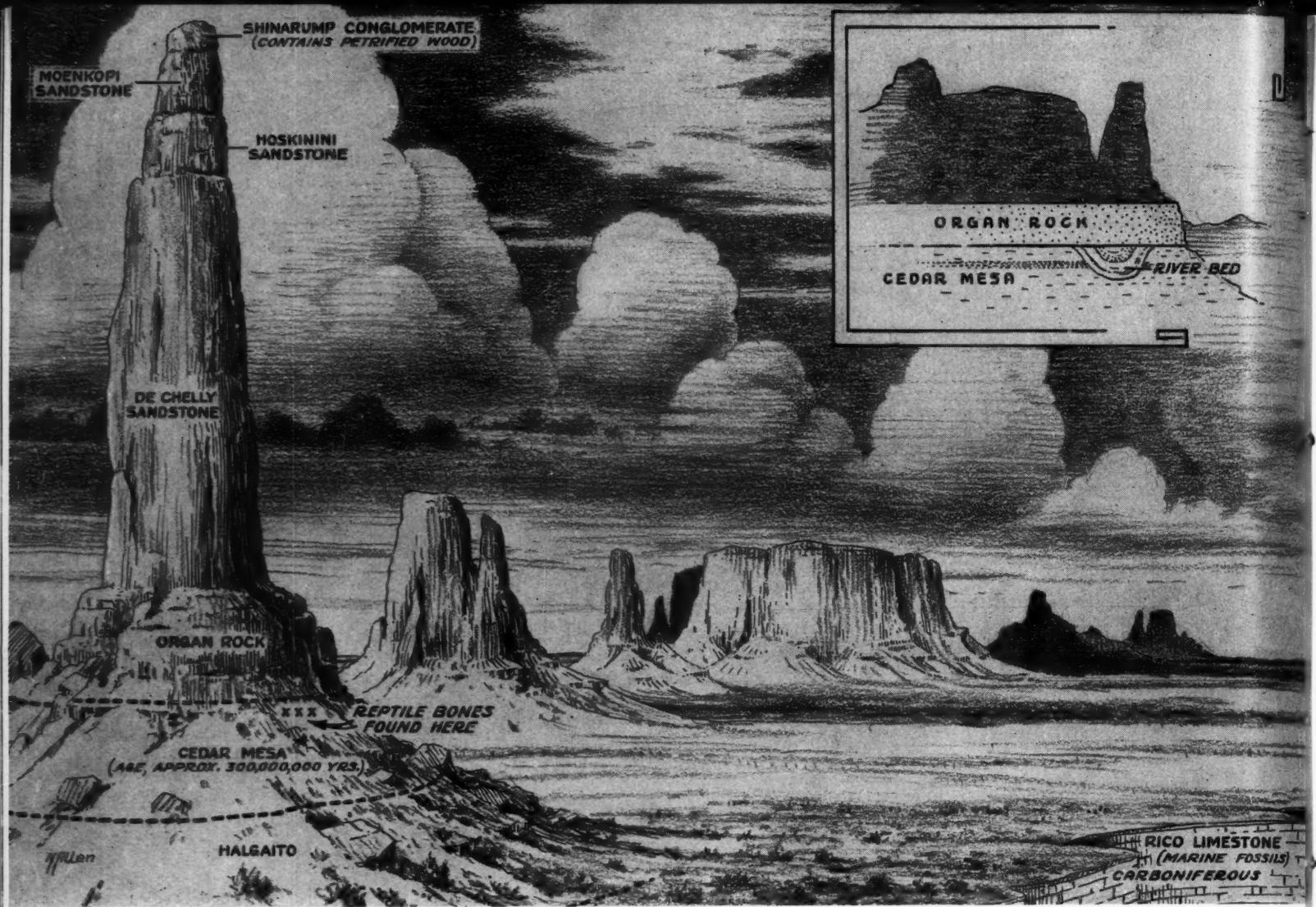
high school boys, Bill Rush and Ed Cott had been assigned to a sidehill to explore. They had come across the prize find in their regular day's routine. The boys were passing around the usual banter. "So that was a Pelycosaur! Well, if that was all the professor wanted, they would have brought one in every day." But they were proud of their discovery, nevertheless.

"It was one chance in thousands," said Dr. Camp. "We might find several in this locality, but the odds are that a lifetime's search would yield nothing."

Floyd Evans and I were invited to go along the next day and examine the new find. That night I had dreams of strange looking reptiles crawling around in the ooze of a prehistoric mud-flat.

The camp was out at dawn. We rode in Goulding's big-tired station wagon, as he was as eager as the rest of us to see Monument valley's big fossil-bone strike.

The morning light cast long shadows across the desert from the great buttes



around us as we traveled along the sandy road, dodging brush and boulders. We came to a point where we left the road and headed off toward a towering mass of red rock crowned by great pinnacles like the fingers of some giant. The coral red sand dunes seemed to hedge us in on all sides, broken here and there by patches of the bluest sagebrush I have ever seen. Even the color camera failed to find any green in the leaves of this strange plant. A bright sprinkling of yellow and white flowers against the almost artificially red sand, the vivid dark green of juniper trees against the flaming red cliffs and the blazing blue sky with fluffy white clouds made a fellow wish he had brought more color film along. The way Harry was running at those sand dunes and plunging over them, we thought he would drive us right to the spot where the fossil was lying. But the deep gullies became too numerous to dodge and finally stopped us.

The boys in the party said it was just "a hop, skip and a jump" from this point to the fossil skeleton. But by the time we older members of the party had pulled ourselves over the last ledge of red sandstone and climbed the last talus slope, we knew the boys' estimate was an under-statement.

I'll admit I was a little disappointed when I first saw the curled conglomerate of bones embedded in a boulder. It wasn't

nearly as impressive as the skeletons of dinosaurs I have seen in museums. But the doctor had said it was worth a dozen dinosaurs to science. And he knows more about it than I do.

As he began to explain, the 28-inch reptile skeleton began to take on added importance. The spinal column was intact, with the ribs in place on both sides. There were four tiny patches of white spots which the doctor assured us were the foot-bones. I wondered about the size of the tracks compared with the small feet of this specimen. He reminded me that reptiles, even adults, vary greatly in size, since they grow as long as they live. And anyway, even the skeleton of a human being looks small compared with a living person.

I deplored the fact that the head was buried in the sandstone and could not be seen. Dr. Camp replied that this was a fortunate circumstance. The head, so important in identifying a new species, will be better preserved than the exposed portions of the skeleton. It can be uncovered by delicate tools and months of patient work at the museum.

Across from us on a sheer cliff could be seen a well-defined line between a fine-grained sandstone and a coarser stratum below. The doctor pointed out a curious marking on the cliff and told us it was

the ancient riverbed his crew had been following through the hills. Closer inspection bore out his statement. We were looking at a cross-section of an ancient arroyo that traversed the area before the sedimentary rock was laid down on it.

The doctor gave us an interesting discourse on geological history as disclosed in the strata of sandstone to be seen in the Monument valley pinnacles. I finally became lost somewhere between the Upper Permian and the Triassic ages, so he promised to make me a cross-section sketch of the whole thing. His sketch is reproduced in the clean lines of Norton Allen's art with this text.

While the boys were loosening the 800-pound slab in which the skeleton occurred, the doctor got out his brush and can of shellac and with the care of a true scientist painted a protective coating on the fossil.

Floyd and I uncased our cameras and went to work on the professor, the terrain, the bones and the diggers. The boys kept bringing up the subject of that steak dinner they were to get.

I had backed up over a rough mass of sandstone talus to get a color shot of the proceedings when I happened to glance around. You can imagine the thrill when my eyes rested on another jumble of bones embedded in a rock. There were not as



Above—Monument valley, where scientists once thought no fossil life existed.

Below—Ancient streambed where the fossil bones were found is about the center of the picture, just below stratum line which extends entirely across the view.

many of them exposed as in the previous skeleton, and there was more evidence of water wear, but they undoubtedly were reptile bones similar to the ones now being shellacked.

I called Dr. Camp, and the entire crew came over to inspect the new find. The doctor examined the fossil for a minute, then turned to me with a happy expression.

"It is a *Cotylosaur*," he said. "See the difference in the vertebrae? This is an almost complete skeleton of the other lizard

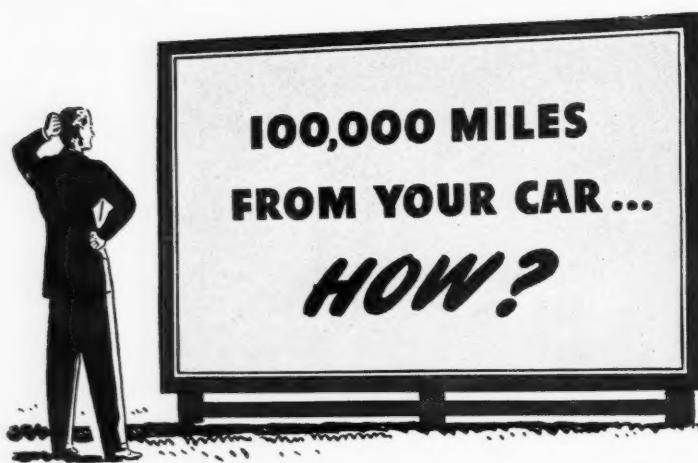
we have been seeking. He was more primitive than the *Pelycosaur*. In fact, he was more like a big salamander, and probably was amphybious. John, you've really made a perfect day of it for our expedition."

I'll not deny that the incident gave me a big thrill. It was a lucky break for a rock-hound who knows almost nothing about paleontology. A couple of the boys started good-natured beefing about the job of getting two rocks down the hill. One of them suggested that since I found the

darned thing it was my job to get it back to camp. I promptly quit-claimed all interest in my discovery in favor of science—and went on with my photography.

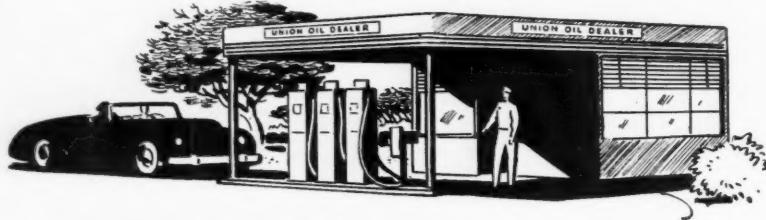
That night after the others had gone to bed, Dr. Camp and I sat in Mrs. Goulding's kitchen. The table was covered with drawings and diagrams. It had been a big day for both of us. He had acquired important new specimens, and I was getting the final details of a story for *Desert Magazine*.

"Here," he said, "is the juncture be-



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tween the Organ rock and the Cedar mesa formation where we found the bones. The strata above at De Chelly sandstone, then Hoskinini, Moencopi, and the Shinarump conglomerate in which petrified wood often is found. That is the highest formation in the valley."

"But doctor," I asked, "that is still very ancient rock isn't it?"

"Yes it is," he answered. "In other parts of the plateau the Shinarump is overlaid with Chinle clays, and above them are the Wingate and Kayenta sandstones, and finally the great thick mass of Navajo sandstone in which Zion canyon has been carved."

I knew something about Navajo sandstone. The park ranger at Zion had spent some time impressing on me the extreme age of this formation, and the countless years required to deposit it as windblown sand. My head was in a whirl, trying to grasp the tremendous spans of time involved in the formation of the earth's crust as we know it.

Finally I asked the doctor to give me an estimate of the age of the Cedar mesa formation.

"In round figures," he replied, "those bones we found today were probably 300,000,000 years old. They belong to the Lower Permian period in the earth's history, and are just above the upper carboniferous where the first primitive fossil reptiles occur."

It is very difficult indeed for mere humans to grasp the concept of time as it applies to geographical history. It probably required a longer period of time for Nature to lay down any one of the strata in the doctor's geological chart than the entire span of years in which man has been on earth.

I looked down at the table, and there in one of the doctor's diagrams a pattern seemed to take form. It reminded me of a big dictionary, and the drawing with the cross-section of ancient riverbed with an initial "R" in it looked like the thumb indenture which marks the letters of the alphabet. I called Doctor Camp's attention to the simile. He smiled and pushed the papers aside to go to bed.

"That is just what it is, John," he said. "A thumbmark on the pages of time, the one thing any good paleontologist spends most of his life trying to establish. When we can find these thumbmarks, it makes the 'book' of time more easily understood for those who follow."

• • • Accommodations at Las Vegas ...

Las Vegas chamber of commerce has urged that motorists planning to visit southern Nevada during the weekends from September 27 to October 25 should make reservations well in advance as horse racing events planned for the five Sundays will bring large crowds to that area.

GREAT SANCTUARY

pharmacist's mate in the U. S. Navy, stationed at San Diego. He identified the fire vault or shrine shown in the accompanying picture as part of the Great Sanctuary in the courtyard of the Chetro Ketl ruins in Chaco Canyon national monument in New Mexico. Elmore spent two summers at Chaco canyon and is intimately familiar with the prehistoric ruins there. His winning manuscript is published on this page.



By FRANCIS HAPGOOD ELMORE

THE prehistoric masonry pictured in your August number, which you suggest as being a "Religious shrine, burial pit, fire vault or storage bin" is found in the Great Sanctuary in the courtyard of Chetro Kettle (Chetro Ketl) located in Chaco canyon, New Mexico.

Chaco Canyon national monument is reached from the south by leaving U. S. Highway 66 at Thoreau and traveling 64 miles north. Thoreau is 30 miles west of Grants and 30 miles east of Gallup, New Mexico. From the north, the monument is reached by traveling south from the little town of Aztec and Aztec Ruins national monument, a distance of 40 miles on State Highway 55, then on State Highway 35, a distance of 24 miles to monument headquarters. From the east, one may take State Highways 44 and 55 from Bernalillo, New Mexico and travel 140 miles to the Chaco canyon turnoff.

Chaco Canyon national monument was so proclaimed on March 11, 1907, and is administered by the department of the

Winner of the Desert Magazine's Landmark contest in August was Francis Hapgood Elmore,

by the Hyde expedition, and the National Geographic society continued excavations in 1922 to 1926. Pueblo Bonito is D-shaped with its long diameter 667 feet and the shorter axis 315 feet. Its northern wall, part of which was destroyed by the falling of Threatening Rock early last year, is over 800 feet in length and is still standing in places over 40 feet high. Pueblo Bonito was at least four stories in height and contained about 800 rooms and 32 kivas, or ceremonial chambers, and at the height of its development contained a population of from 800 to 1,200 people.

Chetro Kettle, the origin of the name is unknown, is situated about one-fourth of a mile east of Pueblo Bonito. It is about the same size as Bonito, and was also an ancient community house, which if set down in a modern American city, would cover two average city blocks. The Great Sanctuary, in which occurs the "fire vault" pictured in your magazine, is located in the east side of its plaza. No one knows its prehistoric use, although many theories have been offered.

Chetro Kettle was first studied in 1921 by the School of American Research. Subsequent seasons of excavation uncovered the circular structure approximately 48 feet in diameter with four post holes, an altar, and two "fire vaults." One of the greatest finds was the uncovering of 10 crypts in the kiva wall. Crypt number 6 may be seen to the left of the "fire vault" in the photograph. In each of the 10 crypts were the remains of strings of beads and numerous pendants and buttons of turquoise. The strings ranged from one 7 feet long, containing 983 beads, to one 17 feet long, containing 2,265 beads.

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It Was Fun to Explore

the desert in the good old days when there were plenty of tires and our desert trips were limited only by available time and the family budget. Well those days aren't gone forever. One of these days when we have disposed of Herr Schickelgruber and the Mikado, the open road will be calling again and we will be following strange and mysterious trails that lead out into the land of

scenic canyons and gorgeous sunsets. In the meantime it is relaxing to recall some of the exploring trips of the past.

Just to help jog your memory, here are some of the signs you have encountered on vacation or weekend trips to the desert country. How many of them do you recognize? Look them over carefully and identify all you can—and then check up your answers at the bottom of the next page. You'll find these two pages, and the memories they recall, good tonic for war nerves.



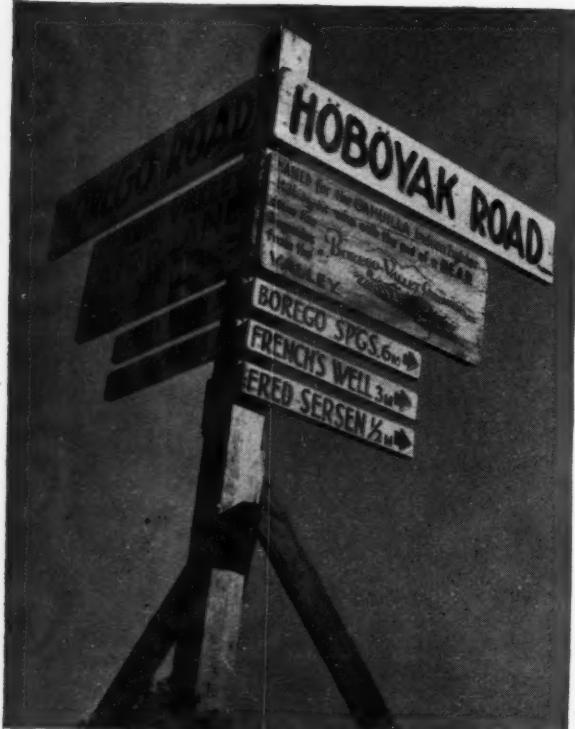
1—Trails to palm oases . . .



3—At the top of a desert pass . . .



4—Handwriting of the Indians . . .



2—Ancient home of the Cabuilla Indian . . .



5—To crumbling ruins on an old trail



6—Prospectors come here for water . . .



7—The land of co...



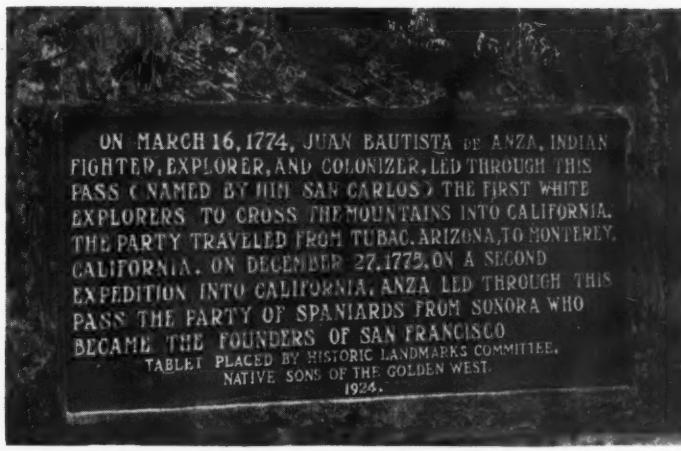
8—Honoring an old desert rat . . .



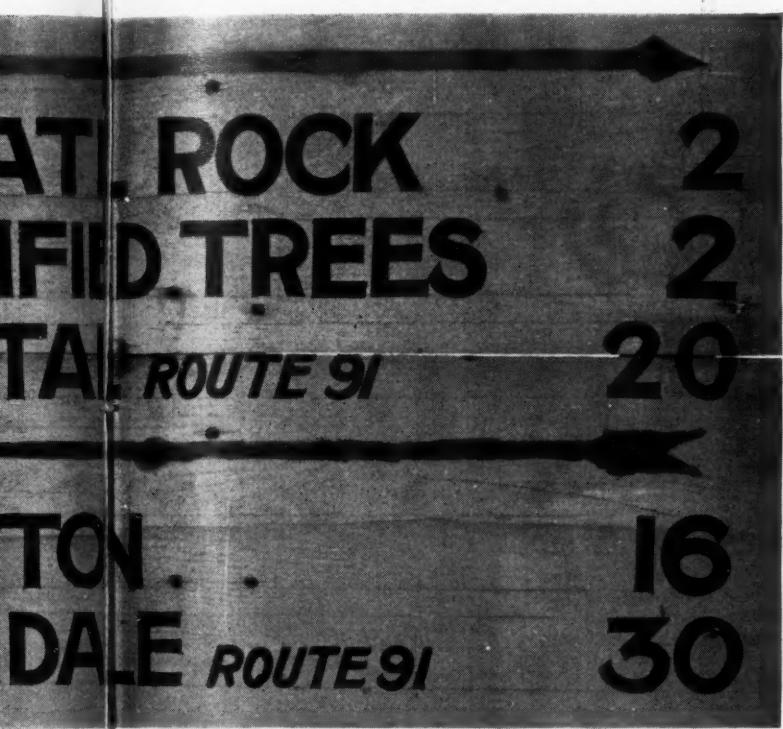
come here for water...



9—Roads to a desert playground . . .



11—Plaque on a historical trail . . .



7—Land of colorful rock . . .



12—Signs to the waterholes . . .



13—Victim of a six-shooter . . . 14—Mexican '49ers followed this trail

Identification . . .

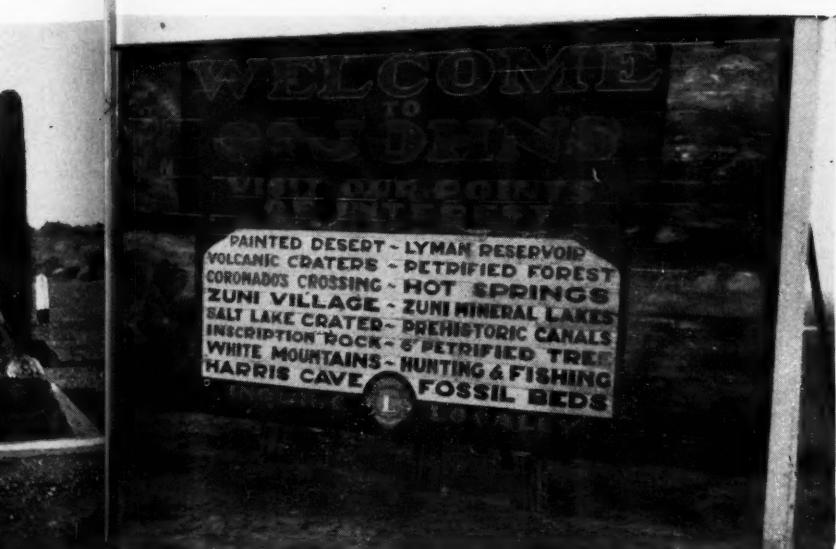
- 1—At Thousand Palms oasis, Coachella valley, California. See *Desert Magazine*, April 1941.
- 2—Sign in north end of Borrego valley, California. Caption on sign "H O B O Y A K ROAD. Named for the Cahuilla Indian fighter who with the aid of a BEAR drove the Dieguenos from the valley." Sign was erected by Harry Oliver, old-time homesteader in Borrego, and the reference is to an old legend of the Cahuilla country.
- 3—This sign is at the top of the pass on the gravel road from Lucerne to Barstow, not far from Stoddard's well.
- 4—This sign is near Palo Verde intake not far from the road from Blythe to Vidal, California. In-

scription reads: "Giant Pictograph Figures, discovered from the air. Location permanently established 1932, Lieut. Kaye of March Field. Three human or god figures 95 to 167 feet long, two animals, coiled serpent, interesting lines . . . Origin unknown. Probably ancient. Made by scraping desert sandstone pebbles into windrows, leaving figures of sunbaked earth."

5—This sign along the Yuma-Quartzsite road in Arizona, indicates the ruins of a stone cabin believed to have once been an overnight shelter on the military road from Prescott to Ehrenberg. *Desert Magazine*, August, 1938.

6—Wiley's well on the Blythe-Niland road, California. *Desert Magazine*, April, 1939.

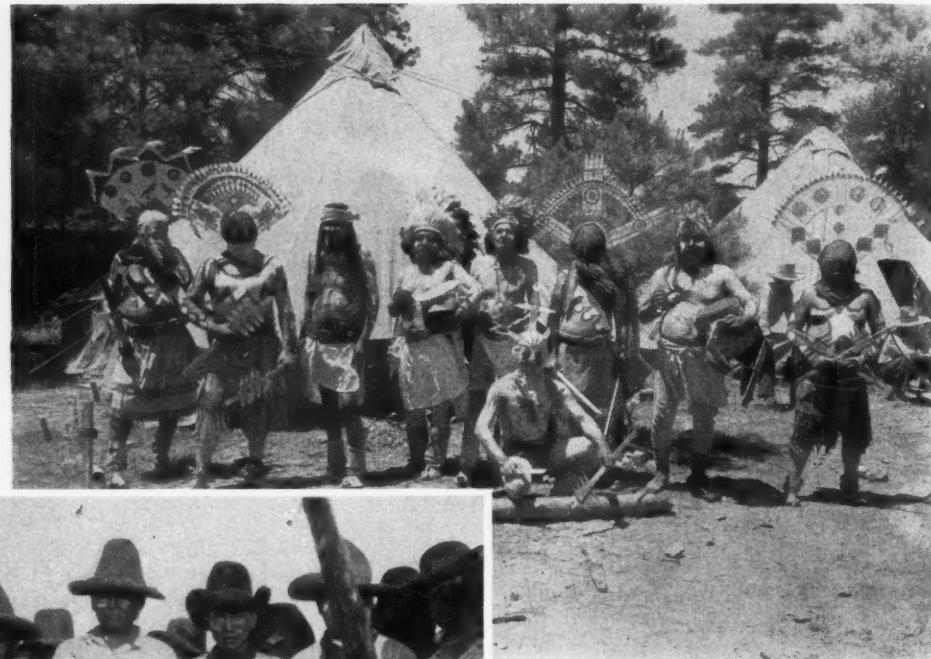
(Continued on page 41.)



10—St. Johns has everything . . .

Devil Dance of the Apaches

In the days when the Apache Indian ran free and wild on the open range every member of the tribe was trained for hardship and endurance. Today stock-raising and agriculture have taken the place of hunting and marauding and as far as the young men of the tribe are concerned the training is less rigorous. But the Apache girls must still prove their stamina and endurance by going through the traditional Coming-Out dance. Here is the story of one of these ceremonials.



Sacred cornmeal is smeared on the faces of the Apache girls at their Coming-Out dance.

By MARGARET STONE

VIOLET, the shy White Mountain Apache girl who lived in my home for many months asked me to go with her to the Coming-Out dance of her young sister at Fort Apache. Since the government allows only one gala day each year to the Apaches, they gather from far and wide on the Fourth of July and combine their ritual for young girls with the celebrated Devil dance. I had always wanted to see it, but on account of the atro-

cious stories told of happenings at these dances I hesitated to go alone. With Violet as my hostess it was quite a different matter.

The sun was making shadow pictures on the grass through the tall yellow pines high in Arizona's White mountains when Violet and I parked our car near the great tent pitched in an open glade. This was where the four young girls who were making their debut would pass the tests given them by the older women. They would dance back and forth all night long for four nights to the dull beat of a drum

and the ceaseless chant of the medicine man in charge.

"Tell me something of the significance of this dance," I asked Violet, and she looked around cautiously before she began to talk. You see she is not exactly a favorite with her tribe because she has a child crippled from birth and she would not deliver it to the medicine men who would allow it to perish. Instead she took

it away from the reservation and gave it every chance to become normal, even resorting to orange juice and cod liver oil in the hope of making the little back straight and strengthening the twisted limbs.

"When our girls reach a marriageable age they must go through this ceremony in order to be good wives and mothers. They must keep awake during the entire ceremony and must not scratch themselves nor eat any salt. If a girl falls asleep during the four days she will always be asleep when her children are sick or need her. That is a very bad thing to happen and is a disgrace to the entire family. An old grandmother is appointed to watch over the girls when they are not dancing on the deerskin, and she pinches them when they nod."

"What do you mean 'dancing on the deerskin'?"

She led me to where I could look into the dance tent ready for the first night's ceremonial. Stretched tightly on the ground was a whitened deerskin, pegged down. In fact there were four of them. Each girl was to do her little dance routine on a deerskin and her moccasined feet must not touch the earth anywhere around it.

Since it was still several hours until darkness would permit the dance to begin,



*Above—Apache mother of four. Putnam photo.
Below—Old folks on the Apache reservation. Fraser photo.*

I went with my hostess to her native dwelling. It was a dome shaped hut made of willows set in a circle about 12 feet in diameter and brought together at the top, where a place was left for the escape of smoke. Over the willows was a covering of Johnson grass and reeds woven in and out among the supporting frame until the whole thing looked thatched. Then pieces of canvas had been stretched tightly around the side that would receive the most driving of summer rains. There were no chairs or beds and the floor was hard beaten dirt.

I was glad when Violet suggested we sit outside while she finished a basket she was making for me. It was an old time burden basket, woven of willows and grasses, and would hold perhaps three gallons. The pattern was worked around it with red dyed willows, and the whole thing was elaborately trimmed with buckskin fringe loaded with tinkling bits of copper and tin. A broad band was added which slips across the forehead and supports the weight of the basket on the shoulders. This type of basket was at one time quite plentiful among the Apaches but the precious art of basket making is dying out in that tribe. The lovely smooth plaques and the huge storage baskets holding a bushel or two of shelled corn, acorns or piñon nuts are not to be found in the wickiups and trading posts as they were a few years ago.

Beyond the wickiup extended one of the most beautiful and fertile of Indian Reservations, the White Mountain Apache home.

After many war torn years the Apaches were divided into four groups and placed on good reservations. They have not made as much of their opportunities as they might, but thousands of fine cattle and sheep graze on their land, and the men, when they choose to work, are splendid road builders, miners and woodsmen. They work in the sawmill set up in the midst of their forest. The whole tribe profits from the timber sold to the white man. Many thousand bushels of wheat and corn are raised each year and much good hay sold from their meadows.

But let it be known that a gathering is to be held some moonlight night and the men and women forget that Uncle Sam has forbidden it, and leave everything to join in the carnival. Corn is dampened and sprouted in sacks on a sunny hillside or under deerskins in the wickiups. Then it is pounded into mush on the metates and put into containers with tree barks, the leaves and roots of several herbs including their wild tobacco weed. After it has fermented sufficiently loco weed is added so that visions will come quickly, and then the whole mess is heated and left to settle. The liquid is drained off and more herbs added and the most deadly and potent drink known among Indians is ready to do its duty. *Tulipi* or tul-le-pie it is called. The

men, women and children sit around it, drinking with gourd dippers until they have consumed all this "white-water" they can manage. The effect is just what might be expected.

Violet assured me that this Coming-Out ceremonial and the accompanying Devil dance would not be accelerated by this beverage as all the reservation policemen would be on hand to suppress it, and to do what they could about bootlegging.

The dance began with dusk. Fires were built around a circle with a huge one in the middle. Here the unmarried girls of the tribe circled around and around with the men visitors. Married women could only sit on the side lines and make the young couples blush with their sophisticated banter. I was much more interested in the scene presented by the four debutantes inside the big wickiup.

They knelt like small East Indian devotees before some temple god, their eyes downcast and their slender hands linked loosely in front of them while the godmother talked to them in Apache. Then there was silence until one of the medicine men, seated tailor-wise on the ground took up a home made drum and began to strike it gently. The singers began the chant and one small figure glided to the end of her deerskin in front of them and began a sort of tap dance that never faltered. Backward she went to the extreme end of the skin and while I held my breath thinking she would step off of its sacred precincts, she poised like a butterfly and started forward again. All at once she sank down on the skin and the third girl in the group took up the dancing. This went on and on. I would drift out to watch the dancers outside then back into the tent. The tempo never changed; the singers never faltered and the dancers never lost step.

Outside, wild shouting announced that the Devil dancers had arrived. Seven hideously painted Apache men with grotesque masks were dashing around like dervishes from another world. These were the protectors of the innocent maidens within the wickiup. By their frightful looks and actions they were driving away all evil spirits and bad influences lying in wait for the girls. And while they performed this chivalrous service they were having the time of their lives scaring the white visitors and poking fun at the fat mammas on the side lines.

Around two o'clock there was a break in the outside dancing while coffee was boiled and from a neighboring stand erected for the duration of the dance hotdogs in buns dripping with mustard were provided. The tired hungry little girls inside the tent must have suffered as the aroma of food reached their quarters. But they kept on dancing until dawn. Then they were led by their protecting godmother into a small wickiup for a little rest before they began the morning race with their brothers and cousins. Their faces were smeared

with cornmeal and pollen from cattail rushes and they drooped with weariness. Only one fourth of their ordeal was over. But I had seen enough of the dancing, and wandered away among the wickiups to learn more about basket making.

Since the Apaches have never been potters they depend upon basketry for storage vessels, for waterjars and for dishes and mats. Their work is artistic and beautiful, and they utilize willow, yucca fibers and the black outside covering of the devil-claw to develop their designs. I found one old lady making her woven water jar tight by smearing it liberally with melted piñon pitch. The jar had a narrow neck and a handle woven on one side through which she tied a string of deerskin by which to hang it. She told me she would paint the vessel four or five times with the pitch before it would be entirely water tight.

There is something pathetic about the Apaches, tamed and dispirited, earning their bread by hard work here in the beautiful mountains where they hunted and played and lived in complete freedom before the coming of white men involved them in one of the longest and most bitter of all Indian wars. They are tamed but not reconciled to the mode of American life. The women still dress in long full skirts and their short blouses. Their gleaming hair is worn unbraided and tied at the neck with a bit of deerskin string. They are shy and modest and fine friends when they have learned to trust.

Weather

FROM PHOENIX BUREAU

Temperatures—	Degrees
Mean for August	88.8
Normal for August	88.5
High on August 3	108.0
Low on August 30	66.0
Rainfall—	Inches
Total for August	0.68
Normal for August	0.95
Weather—	
Days clear	19
Days partly cloudy	6
Days cloudy	6
Percentage of possible sunshine	79

E. L. FELTON, Meteorologist

FROM YUMA BUREAU

Temperatures—	Degrees
Mean for August	91.0
Normal for August	90.4
High on August 23	112.0
Low on August 30	63.0
Rainfall—	Inches
Total for month	1.08
73-year-average for August	0.50

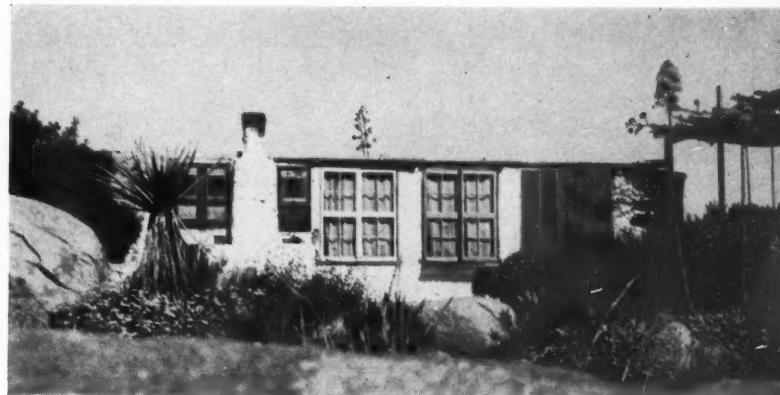
Weather—	
Days clear	26
Days partly cloudy	4
Days cloudy	1
Sunshine 94 percent (388 hours of sunshine out of a possible 414 hours).	

Release from Lake Mead averaged around 14,000 second feet. Storage during the month decreased about 330,000 acre feet.

JAMES H. GORDON, Meteorologist

THE DESERT MAGAZINE

The Marshal Souths spent 10 years building their little adobe home among the junipers and boulders on the top of Ghost mountain. And now they have put a padlock on the door and are following the trail that leads toward the desert horizon—in quest of a new homesite. The reason is water—or rather, shortage of water. The meager cisterns, filled only from the storm water that drained from the roof, proved inadequate for a family of five with two goats and two burros. And so they loaded the goats and the household necessities in a trailer, and took the trail that leads deeper into the Great American desert. Their quest is for a flowing spring where there will be ample water for their needs—and a garden. For the Souths, it is a great Adventure into a new and strange land. Marshal will tell of their progress in future issues of *Desert Magazine*.



The Souths have said goodbye to Yaquitepec.

Desert Refuge

BY MARSHAL SOUTH

A THIN wisp of desert road, leading on into the dim mystery of vast distance. What is at its end? We do not yet know; but soon we shall. For our feet are upon it; our eyes are towards far horizons.

For this month's chronicle is a chronicle of search—of search for a new location in the great friendly silences of the desert. Already the little house upon the summit of Ghost mountain is far behind us. Its door is shut and the stillness that has closed about it is unbroken save for the hushed footfalls of the wind, wandering lonely around the corners of the white walls and among the scatter of old, abandoned toys beneath the shade of the ramada.

But it is well not to write much of these things or to awaken memories; the ache of them is as yet too close. For it is not easy to wrench oneself from things beloved and from things which long years have tangled so closely with the fibres of one's very soul. Man, it is true, has graduated to a stage in the scale of evolution which enables him, unlike the plant, to move from place to place. But he is still a creature of the earth, and attached to it. The roots which he strikes deep into the earth are not physical roots, but they are none the less very real roots. And their upwrenching can often cause more than physical pain. A deeper pain. Heartstrings go deep into the soil of HOME. On this and on this alone is Patriotism founded. The love of home—of the bit of earth where one's roots are. It is hard to break such ties.

Nevertheless we have turned our faces to the open road and to the wide mystery of the further desert. Already we are deep in its distance-hazed reaches. New plains surround us, new buttes, new mesquite-grown arroyos and new silences beneath the night stars. The sun this morning rose from behind the jagged, purple peaks of weird, unfamiliar mountains, climbing into a cloud flecked sky that was a glory of gold and pink and purple. "Here sun coming!" cried little Victoria, eagerly, clapping her hands. "We tum to new home today, muvver?"

"Maybe not today, baby," said Rider, gravely, taking it upon himself to answer. "Maybe not today—but very soon. Won't we daddy?"

"Of course," I reassured him, "It's there, waiting for us; with everything we need. All we have to do is to keep right on and we'll find it."

"I wan' lots, an' lots an' LOTS of water!" declared Rudyard

emphatically. "I wan' even as much as—as much as—" He struggled for some expression of volume truly colossal. "—I wan' even as much as TWELVE GALLONS."

"And you shall have it, precious," Tanya promised him. "You shall have 12 gallons, for your very own."

And we all laughed. For while the desert sun shines and the creosote bushes glitter and the hills on the horizon are clothed in their witchery of indigo and purple one cannot lose faith. The Great Spirit watches over the wilderness; all the dwellers therein are beneath the protecting shadow of His wing.

But our four-year-old's remark about water puts the whole reason for our move in a nutshell. Water! It has become vital. It is the lure which day by day beckons us deeper into the desert.

Perhaps in normal times our ears would have been more deaf to the call which finally wrenched us from Yaquitepec. We had built our dreams there; we tried hard to convince ourselves that someday we could, by adequate cistern capacity, overcome the water handicap. We did not want to move.

But these are not normal times. Today our beloved nation is engaged in a grim battle for the freedom of the world. It is a battle that will be won largely by the conservation of foodstuffs and natural resources. Every bushel of grain and pound of food that each one of us can produce for ourselves, releases just that much more of national supplies to aid in the winning of the struggle. And even on our mountaintop we felt very definitely that we ought to be producing more. It is true that not a great deal of outside supplies were needed for Yaquitepec. But we did need some—particularly as the demands of our growing family increased. We should, we felt, be able to produce more. Corn, food, larger gardens.

And this was the urge that finally tipped the scale of the long debated water problem. We could not afford to wait years for the development of the necessary water. We must set forth and find it in some new location.

With the decision once made we shut our eyes and ears to all else and fell to packing and preparing. Rider set about dismantling his glass cases of treasured specimens and bugs—packing them carefully for transit. Rudyard—who has a weird collection of old keys, nails, pottery scraps and chunks of stone—rushed and packed all the treasured trash in paper bags and cans. Victoria, having nothing to pack, occupied herself in dashing frantically back and forth between her brothers, snatching treasures from each one's hoard and carrying them to Tanya, shrieking gleefully "Pack this fo' me" . . . incurring thereby explosions of wrath from the respective rightful owners of the loot.

Yes packing was a big job. Had we paused to think we might have been staggered at the problem. But we did not pause to think. That is usually the better way, anyhow, when tackling a job of this kind. While Tanya packed I carried, back-load after back-load down the long winding trail of Ghost mountain. The

burros were out at pasture, far away. But I did not regret not having them. For packing *up* the mountain they did nobly. But it was always hard for them to transport loads down. The trail was too steep. A man can do better, as a burden carrier, than an animal, on precipitous trails—as the carriers of mountainous China and of other sections have demonstrated. I used my own shoulders and made sometimes six round trips each day. There was a lot of stuff to move. And an amazing amount of books. The books were the heaviest. For some of the articles that were too large to be carried by back-pack we made a sort of litter, with two long poles. Tanya took one end and I the other, while Rider stayed atop the mountain to look after Rudyard and Victoria. A long, hard job, the carrying. But eventually it was all finished.

Came then the equally staggering job of transportation. How was this carefully selected mass of essential property to be moved? The old car could not begin to hold it. We cast eyes on an old two-wheel trailer which we had discarded years ago. Yes, perhaps it could be fixed. Its tires had been left on the wheels. For over six years they had been standing flat and bleaching in the desert sun. Dubiously we brought the pump and pumped them up. Astoundingly they seemed to hold. We went over the old trailer with a monkey wrench and tightened up bolts in desert-shrunken timbers. Then we began to load.

There was far too much—even by the most dangerous over-loading of car and trailer—to be transported in one trip. We saw that we would have to make two. But to where? Our destination was unknown—still is. What should we do?

We solved the problem by hauling a first load away to a distant desert point where we stored it; solving also another problem, that of our two pet goats. We could not leave them behind at Yaquitepec, unattended. And we did not want to divide our family by having someone stay behind to look after them—

fire hazards this summer having been much worse than usual in our desert mountain region. So we took Conchita and Juanita along, building them a tiny pen on an overhanging extension of the trailer. And, after many days, having stored our load, we brought them back with us. For there was no one at the other end to look after them either.

And when we had come to the foot of Ghost mountain again we had cause for thankfulness that we had not left any of our little family at home. For around our land the desert was an inferno of smoke and flame. Roaring over desert ridges, seemingly barren, an ocean of flame was tossing to the sky. Smoke hung over everything in a terrifying pall. A huge mountain not far from Yaquitepec was a seeming volcano of rolling smoke and soaring flame. For a week it burned. Perhaps the first time within centuries that fire had ravaged it. And when the last coals were dead it was a blackened, lifeless mass. But the flame-furies spared Yaquitepec. By a miracle our goods were safe.

So we loaded the last load—an even more staggering one than the first had been. And we put Conchita and Juanita back into their tiny pen on the trailer. And we climbed into the old car, with Rudyard sandwiched into a little niche all his own, among the books and boxes, and set out. Slowly, down the rough stretch of home trail, between the creosotes and mescals and yuccas we lurched our laboring outfit and with bated breath turned down the treacherous sandy wash for the last time. On its further edge we paused and looked back. Ghost mountain shimmered in the sunlight. Lonely. And somewhere behind its rim rocks we knew the little house stood. Silent. Lonely too.

Our eyes were misted a little. There was a tight clutch at our hearts and a little sob in our throats as we waved a last farewell. Then we went on, heading down the road, our heavily loaded trailer creaking behind us.

To where? Not yet do we know. But we know as surely as we knew that evening, when the sun sank in a glory of crimson and gold behind the hills and the grey, silent night hawks began to flit above the desert creosotes, that it is to a greater, better location. For Life moves onward. And though the old is behind there is always the new ahead . . . new vistas, new experiences, new promise and new hope. Perhaps Rider is right—perhaps it will be very soon that we shall come upon the place that is to be our new desert home. When we come to it we shall know it. But for now we go on through desert dawns and starlight—seeking. Perhaps by next month we may be able to tell you of something found.

NEW DAWNS

*Lure of the desert's farther reaches,
Vaster horizons for my goal,
Where glinting sunlight burns and bleaches
And newer vistas lift my soul.*

*The old axe falls, unused, unwanted,
The hoe leans on—the gateway yawns;
My heart, still hungry, still undaunted,
Has turned again to newer dawns.*

—Tanya South

YUCCA HARVEST IS AUTHORIZED . . .

Harvesting of yucca from public lands under his jurisdiction has been authorized by Secretary Ickes of the interior department. The fiber of the plant is to be used during the emergency for hemp and rope. The secretary stipulated in his order that the gathering of yucca should not be extended to areas where it would destroy the scenic or recreational value of lands, and that methods of harvesting not cause soil erosion or fire hazards.

The secretary's order does not extend to national forests as they are under the jurisdiction of the department of agriculture.

Sun Drenched Pleasures

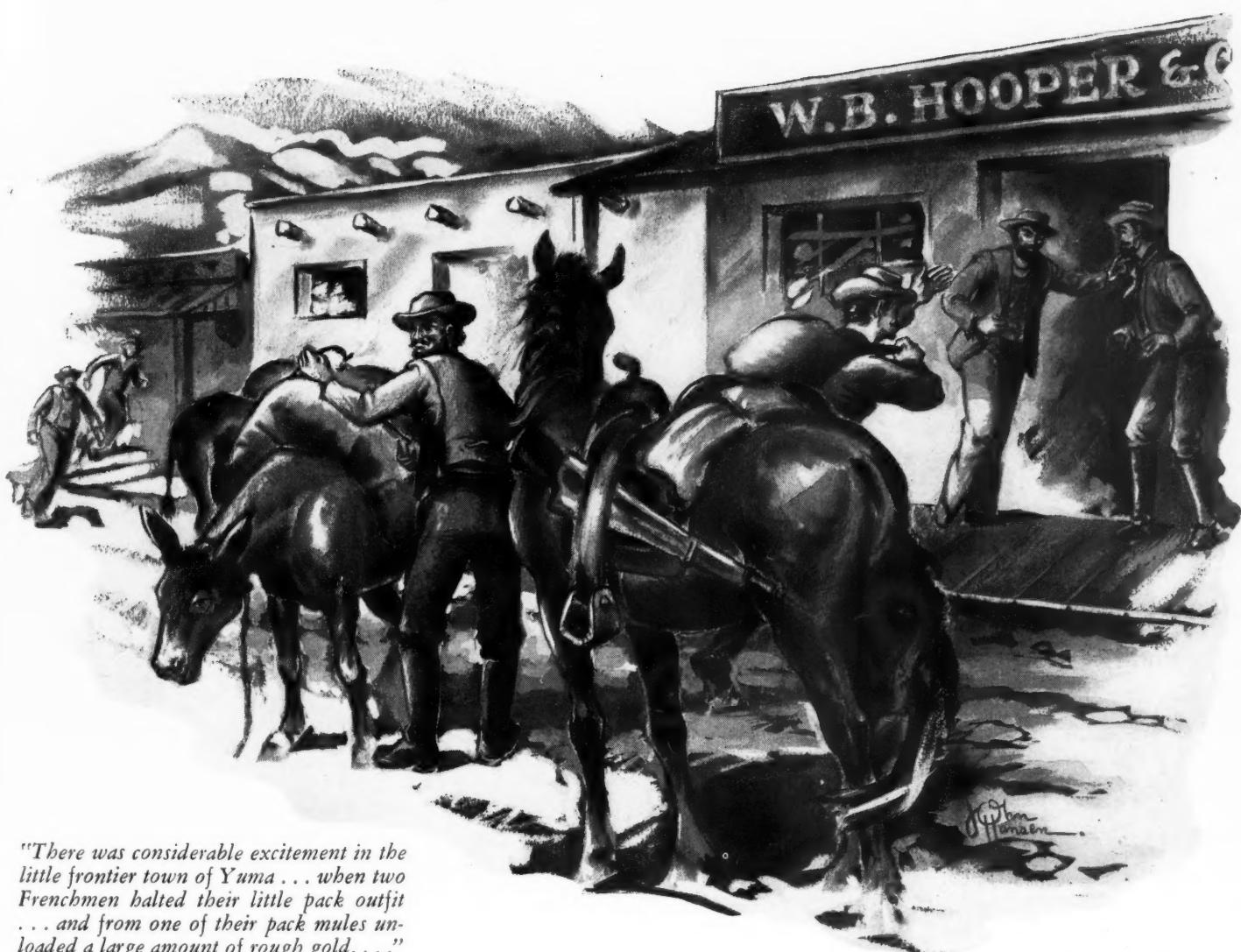
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THE DESERT INN

PALM SPRINGS, CALIFORNIA



"There was considerable excitement in the little frontier town of Yuma . . . when two Frenchmen halted their little pack outfit . . . and from one of their pack mules unloaded a large amount of rough gold. . . ."

The Frenchmen's Lost Gold Mine

By JOHN D. MITCHELL
Illustration by JOHN HANSEN

HERE was considerable excitement in the little frontier town of Yuma in the spring of 1867 when two Frenchmen halted their pack outfit in front of W. B. Hooper and company store and from one of their pack mules unloaded a large amount of rough gold that had been hammered from rusty looking quartz, bits of which still clung to some of the larger pieces of gold.

After purchasing additional mules and supplies the two men still had \$8,000 on deposit to their credit in the Hooper store. After spending several days in town the men headed their pack train out into the

desert in the direction of the Eagle Tail mountains. Many of the male inhabitants of Yuma set out to follow the prospectors into the hills, but lost track of them the first night out.

The two men were never seen alive again and nothing was ever heard of them. The \$8,000 was still on deposit at the Hooper store 20 years later. Some years later two skeletons were discovered in the mountains to the east, but there was no way of identifying them. Many oldtimers believe that those piles of bleaching bones were all that was left of the two Frenchmen.

In 1873, King Woolsey and his merry men were out chasing Apache Indians for their scalps and one day when riding a

Here's the story of a mystery mine somewhere in southwestern Arizona that once produced ore of fabulous value. The men who discovered it died a tragic death—leaving no information that would indicate location of their property. In this story, John Mitchell has pieced together all the evidence bearing on the Frenchmen's lost mine—but there are still too many missing links in the tale to offer much of a clue as to the actual whereabouts of the gold.

well marked trail through the Tenhachape pass came upon a large pile of rich gold ore. Some years later an expedition was sent out to locate and remove the ore. The ore was taken to Yuma, but the mine from which it had been taken could not be found.

Lincoln Fowler and a brother prospecting in the Harqua Hala country in 1889 discovered an old working on a gold ledge and the remains of a camp nearby. There was nothing to indicate when or by whom it had been worked. Closer examination proved the outcrop to have been a rich pocket but only a few small pieces of the ore were found scattered about.

A. H. Peebles of La Paz and Rich Hill fame once stated that in 1868 while pass-

ing through the Harqua Hala country he came upon three Frenchmen who were working a prospect nearby their camp and seemed to be doing well. However, on the return trip to Yuma Peeples found the camp burned and the skeleton of what seemed to be a white man. Some Maricopa Indians were then in the vicinity and were believed to have been responsible for the killing.

Experienced miners of that time pointed out that it was very unlikely that the two Frenchmen would have packed their ore all the way from the Harqua Hala country to the Tenhachape pass when it would have been much easier for them to have taken it to the Hassayampa river and ground it in arrastras.

Many of the old time prospectors and desert rats around Yuma have looked for the rich outcropping from which the two Frenchmen took their ore. Most of the searching has been done in the Tenhachape pass country where the pile of rich ore was found by Woolsey and his men.

The firm of W. B. Hooper and company was later changed to Hooper, Barney and company, but is now out of business.

The late George Sears of Ajo and Gunsight fame vowed there was plenty of gold in the Eagle Tail mountains and George had about 25 pounds of rusty looking gold quartz to prove it. It seems that Sears was on his way from Phoenix to Ajo one time and decided to pass through the Eagle Tails. He carried with him on his pack animals a small roll of bedding and grub.

He spent the night after a hard rain near a small depression on the side of a wash in the Eagle Tails and the next morning while getting breakfast noticed his hobbled jacks drinking water from what looked like a shallow prospect hole and that there were some loose rocks on the small dump below the hole. After breakfast he packed up and when passing by the hole filled his canteen and threw some of the rusty looking pieces of rock into the pack box with his grip to more evenly balance the load.

As his food supply diminished he found it necessary to balance his load several times by picking up rocks along the way. When George finally reached the Gunsight mine 16 miles east of Ajo there was not much left in the grub box, but in unloading the pack box he discovered that the rocks he had put in first in the Eagle Tail mountains were chock full of free gold. Sears was never quite sure whether he could find the place where he picked up the golden rocks that morning, but he had the rocks to prove to any doubting Thomas that thars gold in the Eagle Tails.

Whether the shallow hole from which old George Sears took the rusty chunks of rich gold quartz has any connection with the Lost Frenchman mine would be difficult to say. However, the ore found by

Sears seemed to be the same kind from which the Frenchmen pounded their \$8,000 worth of gold and is said to be the same kind of ore that was found by King Woolsey and his men in the Tenhachape pass country while out to lift Apache scalps for the bounty money.

• • • FLAGG OF ARIZONA IS PRESIDENT OF FEDERATION

Second annual meeting of the Rocky Mountain Federation of Mineral societies held in Salt Lake City August 29-30 was attended by nearly 100 federation members.

The session opened with an informal meeting Friday evening at which motion pictures and natural color views of Utah collecting fields were shown.

Following registration Saturday morning Prof. R. E. Marsell of the University of Utah gave an illustrated lecture "The Geology of Our Back Yard." After an intermission of an hour which was spent in

the exhibit room Alfred Buranek, geologist for Utah state department of publicity and development, gave a lecture on "Utah's Famous Mineral Localities."

At the business meeting which concluded the morning program, the following officers were elected: A. L. Flagg, Phoenix, Arizona, president; Dr. Olivia McHugh, Salt Lake City, vice-president; M. Barrie Berryman, Salt Lake City, secretary-treasurer.

Luncheon at the historic Lion House was followed by a trip to the Utah Copper company open pit mine at Bingham. The annual dinner, held in the Art Barn, was attended by 85 members, delegates and guests. A lecture and demonstration on the subject of fluorescence by Dr. H. T. Plumb, special lecturer for the General Electric company concluded the Saturday program.

Sunday was devoted to a field trip to Pelican Point on the west side of Utah lake.

The Desert Trading Post

Classified advertising in this section costs five cents a word, \$1.00 minimum per issue—
Actually about 1½ cents per thousand readers.

OPPORTUNITY

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12 BEAUTIFUL perfect prehistoric Indian Arrowheads, postpaid for a dollar bill. Catalog listing thousands of other relics free. Caddo Trading Post, Glenwood, Arkansas.

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Bust of Uncle Sam—handpainted on 1/4-inch plywood—6 inches high—\$2.50 postpaid. The Arrow and the Song Studio, J. R. O'Connor, Jr., 12 Sayward Street, Dorchester, Mass.

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HERE AND THERE . . . on the Desert

ARIZONA

Progress of New Dam . . .

KINGMAN—Utah Construction company has set up headquarters in Kingman for construction of Davis dam and established a railhead at Louise, two miles east of here. The company has purchased Kit Carson Inn west of Kingman and has taken over a building at Third and E. Beale streets in town. At the railhead several tracks will be laid to provide switching and unloading facilities. First of several buildings to be constructed will be a warehouse 50x150 feet. Improvement of roads to the dam site has also started in cooperation with the Arizona highway department.

Too Little and Too Late . . .

TUCSON—Dry weather has taken heavy toll of rangeland in southern and central Arizona. Late summer rains appeared to be too late and too little. Feed for cattle this fall and the spring calf crop will be vitally affected, according to Pima Cattlemen's association.

Tewa Potter Dies . . .

HOLBROOK—Lesse Nampeyo (Desert Magazine, August, 1939) world-renowned Tewa pottery maker, and 100 years old, died at her home below Walpi mesa July 20. She left three generations to carry on her craft, after having revived the art among Hopi Indians. Samples of work have been displayed at the New York world fair and the Chicago world fair of 1910.

School Responsibility Refused . . .

PHOENIX—Education of Japanese children at Poston "seems to me to be a federal responsibility which the state of Arizona should not assume," E. D. Ring, state superintendent of public instruction, said refusing a request to provide the state per capita school allotment for Japanese children. Willard W. Beatty, director of education for the project, sought the funds.

Yucca Fiber Plant . . .

KINGMAN—C. L. Wells, president of General Fiber Products corporation in Kingman, recently exhibited plans for a proposed yucca fiber processing plant to be established at McConnico, a short distance west of Kingman at \$150,000 initial cost. Thousands of acres of Mohave county land are thickly covered with yucca growth valuable for fiber. First of a series of three mills will have a 15-ton capacity, Mr. Wells said. The project has a high priority rating.

Arizona Milk Shortage . . .

TUCSON—Because of a state-wide shortage of milk, specialists at the University of Arizona have urged the war relocation authority to obtain milk for the two Japanese resettlement camps in this state either from near-by states or by importation of herds from the Mid-west.

Death Delays Dance . . .

HOTEVILLA—Traditional snake dances of the Hopi Indians met trouble this year when the Hotevilla priest died, delaying the last of the three dances held each year until September 4. Ordinarily all three ceremonials are held in August. First two dances of this aboriginal supplication to tribal gods for rain to nourish corn crops were held at Shun-

gopovi, August 26, and Shipaulovi, August 27. Neither of the first two rites attracted the usual crowd of tourists because of tire shortage.

Dr. G. C. Daniels, former manager of Walla Walla, Washington, veterans hospital, is now manager of the veteran's hospital at Whipple Barracks.

John W. Tippieconnie, Comanche Indian, when he graduates from Flagstaff state college will be the first of his tribe and possibly the first Indian in the nation to receive a master of arts degree.

Alfred C. Sieboth, 77, first man to envision Coolidge dam when he surveyed its site, died at his home in Pinal county.

Arizona's cotton crop will be 52,000 bales greater this year than last, half of the increase being Arizona American Egyptian cotton.

Dr. Clyde Kluckhohn, ethnologist of Harvard university, is engaged in study at Navajo mountain, where tribesmen live remote from civilization.

CALIFORNIA

Bagging Dates Under Way . . .

COACHELLA—Date growers in Coachella valley opened date bagging work early in August, but were handicapped by lack of competent workmen, and lack of housing for employees. Current farm labor wages for this job are 40 to 45 cents an hour.

100% VIRGIN WOOL HAND-WOVEN TWEEDS

A limited yardage of these beautiful fabrics is still available from our stocks. Hand-woven with painstaking care by our skilled Spanish-American weavers from original designs by Preston McCrossen; distinctive, long-wearing, easy-draping; in weights and patterns for suitings and topcoatings for men and women.

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Fourth and Spring Streets

LOS ANGELES

A. C. Berghoff, Proprietor—Harry J. Wall, Manager

Two Inch Rain Recorded . . .

INDIO—This city suffered minor damage early in August when a freak 2-inch rain fell flooding streets and ground floors and basements of many Indio homes and stores. Streams four feet wide flowed down Fargo and Miles avenues two hours after the storm subsided. No direct damage was caused Coachella valley's heavy date crop, although accompanying humid weather may have had a harmful effect.

Storm Hits Death Valley . . .

DEATH VALLEY—Damage to Furnace Creek inn and roads in Death Valley totals

A WESTERN THRILL

"Courage," a remarkable oil painting 20x60 feet, the Covered Wagon Train crossing the desert in '68. Over a year in painting. On display (free) at Knott's Berry Place where the Boysenberry was introduced to the world and famous for fried chicken dinners with luscious Boysenberry pie.

You'll want (1) A 4-color picture of this huge painting suitable for framing. (2) A 36-page handsomely illustrated souvenir, pictures and original drawings, of Ghost Town Village and story of this roadside stand which grew to a \$600,000 annual business. (3) Two years subscription (12 numbers) to our illustrated bi-monthly magazine of the West. True tales of the days of gold, achievements of westerners today and courageous thoughts for days to come. Mention this paper and enclose one dollar for all three and get authentic western facts. Postpaid. GHOST TOWN NEWS, BUENA PARK, CALIF.

\$75,000 as a result of severe rain storm that swept the area early in August. A six-foot wall of water hit Furnace Creek inn and stripped 7.6 miles of road near the inn down to underlying rocks. Road to Scotty's Castle was practically demolished.

Cork Oak Plantings . . .

BRAWLEY—Several cork oak trees planted early in 1942 in Imperial Valley show excellent growth, reports Frank Beyschlag, farm adviser. Next December 50,000 nursery trees will be available for distribution to qualified cooperators throughout the state. There will be no charge for trees with exception of shipping cost, the farm adviser said.

Desert Trail Sold . . .

TWENTYNINE PALMS—Bill Underhill has purchased the Desert Trail, Twentynine Palms newspaper, from his brother, Clint, along with the Rollerink and theater. Clint Underhill and his wife will publish the Grizzly at Big Bear lake, which was started by Mrs. Underhill before her marriage. This is the first print shop established at the resort.

OPA Reclassifies Dates . . .

MECCA—California dates, both natural and hydrated, are fresh fruit, not dried fruit according to a new decision made by the OPA. Reversing an earlier ruling, the OPA has removed dates from price ceilings. United Date Growers and Coachella Valley Date Growers sought this action to assure growers of a successful season. Date by-products will be classified in a later announcement.

Drainage Relief . . .

BLYTHE—United States bureau of reclamation officials have agreed to maintain Colorado river flow at Blythe at 15,000 second feet until December 1, thereafter increasing it to 22,000 second feet by April to help Palo Verde valley's drainage conditions. A flow of 12,000 second feet in past weeks has tended to lower the river to a point endangering diversion at the intake.

Early Desert Season . . .

PALM SPRINGS—The Desert inn, famed desert hotel, will open early in October, a month sooner than last year, reports George B. Roberson. Other businesses to open early are Village inn and Village Coffee shop, both operated by Desert Inn company.

Army Chapel Planned . . .

PALM SPRINGS—Construction will start soon on a \$42,000 army chapel to be erected on Toney General hospital grounds at Palm Springs. This was formerly El Mirador hotel. The building will be completed by December 15. The Griffith company, Los Angeles, has started construction of new buildings for the hospital.

• • •
Prices for honey from Blythe district double that of last year, according to the semi-monthly report by the federal-state market service.

• • •
Flax threshing in Imperial Valley nearing completion shows an average yield of more than 21 bushels per acre.

• • •
E. E. Gready, pioneer Palo Verde valley rancher, produced the first bale of cotton this year, the bale weighing 475 pounds.

MILLION DOLLAR CROP . . .

Down in the rich land of the Imperial Valley, farmers are producing a new crop—one that has already reached the million dollar stage—that will be of vital importance to America in years to come.

All this has been brought about because farsighted men visioned an agricultural empire to rise out of waste lands of the Colorado desert. Their vision drove them forward against ridicule, against physical obstacles spawned by nature, and against even the elements which apparently contrived in a concerted effort to prevent realization of a magnificent dream.

When the Colorado river poured into the Salton Sea during the disastrous flood of 1906, these pio-

neers faced their darkest days, but they held faith and because they held faith a million dollar rice crop is being produced in the valley as a 1942 defense contribution. But this is only one of the many crops that now sprout from Imperial Valley loams.

This vision has contributed to the defense of America in the erection of Boulder dam, Parker dam, Imperial dam, in the construction of the All-American canal, and the formation of the Imperial Irrigation District, which now waters and provides power for the great inland empire populated by more than 60,000 people.

Upon this solid foundation rests the future of a valley that already ranks among the nation's top agricultural regions.

Imperial Irrigation District



Use Your Own Power-Make it Pay for the All American Canal

NEW MEXICO

Cove Pool Damaged . . .

GALLUP—A landslide loosed from a cliff by lightning, obliterated two-thirds of historic Cove pool in El Morro national monument. Spanish conquistadores camped at the edge of this pool, a natural rock basin 40 feet in circumference, which has always held water.

Gallup Paper Sold . . .

GALLUP—The Gallup Weekly Gazette has been purchased by A. W. Barnes, publisher of the Gallup Independent, daily afternoon paper. Publication will be continued on a weekly basis. Evonn Vogt, former owner, will supervise 500 Navajo Indians living outside of the reservation in McKinley county.

Archaeological Find . . .

SANTA FE—An ancient food jar and a water jar have been unearthed in El Morro national monument by A. W. Webber, an amateur archeologist. Webber saw a faint metal ring showing through sand a short distance south of Cove pool. Investigation revealed a black and white design food jar, 12 inches in diameter. Leaning against it was a duck-shaped water jar, pierced on two sides for thong strings.

English for Warriors . . .

FORT WINGATE—Navajo men eligible for service in United States armed forces will be taught English to familiarize them with military terms at a series of two-month preparatory courses, it has been announced by George Boyce, educational director of the Navajo agency.

War Affects Ceremonial . . .

GALLUP—Because of a 25 percent decrease in the number of Indians attending the 21st annual Inter-Tribal Ceremonial, white men for the first time in history took part. A rule against pale-face participation was relaxed to provide additional pieces for the All-Indian band, previously cut by the draft.

No Silver for Jewelry . . .

ALBUQUERQUE — Government restrictions on use of foreign silver will force New Mexico silversmiths to abandon their trade within a short time, according to Jack Michelisen, of the Bell Indian Trading post. All silver used in jewelry in this country including that used by Indians is imported because the cost is lower than on domestic metals.

NEVADA

Horse Population Declines . . .

CARSON CITY—Need of good horses for war by the federal government is rapidly depleting Nevada's horse population and is even cutting into the prospector's burro, state officials have revealed.

Camel Fossils Revealed . . .

WINNEMUCCA—Dr. Charles H. Falkenbach has obtained some rare specimens of camel bones from the North Antelope valley fossil field north of Battle Mountain. The bones, taken out in blocks of limestone, were forwarded to New York. Dr. Falkenbach is a paleontologist at American Museum of Natural History, New York City.

Nevills Plans New Trip . . .

BOULDER CITY—Norman D. Nevills, veteran Colorado riverman, ending his fourth trip through the Grand Canyon from Lees Ferry to Boulder City, announced that he is already planning a new trip through Cataract canyon from Moab, Utah to Lees Ferry. On his last expedition, Nevills was accompanied by six men and two boys.

River Expedition Ended . . .

LAS VEGAS—Harry L. Aleson has ended a 227-mile trip up the Colorado river, during which his party took 1400 feet of continuous film. He left Lees Ferry in July, passed the mouth of Escalante river, traveled about a mile up the San Juan and returned to the entrance of Forbidden canyon.

California accounts for about one-third of Boulder dam's total visitors, reports the national park service for July.

UTAH

Sheep Brings \$1,000 . . .

SALT LAKE CITY—Cunningham Sheep company of Pendleton, Oregon, paid \$1,000 for a Rambouillet, "Super Ram," on the opening day of the twenty-seventh annual national ram sale at Salt Lake Union stockyards. J. K. Madsen Rambouillet farm at Mt. Pleasant, Utah, sold the sheep.

Wool Fifth in Nation . . .

OGDEN—Utah will be fifth highest state in the nation in wool production for 1942 with 20,295,000 pounds, reports the United States department of agriculture bureau of statistics. Utah is exceeded in production by Texas, Montana, California and Wyoming.

Dewey Dam Waits OK . . .

MOAB—Preliminary surveys for Dewey dam on the Colorado river 40 miles above Moab have been completed and the project awaits only the okay of the war production board to be placed in actual construction, reports John C. Page, commissioner of reclamation. Building of Dewey dam is a "likely prospect," he said.

Monument Unveiling . . .

SPANISH FORK—Two Spanish Fork and Springville pioneers killed in the battle of Diamond Fork fought June 26, 1866, were honored with the dedication of a granite and cobblestone monument on highway 189 in Spanish Fork canyon. Ceremonies were held August 21.

Teacher Shortage . . .

SALT LAKE CITY—Many schools in rural Utah may be closed this year unless relief is found for a shortage of 200 teachers, according to Charles H. Skidmore, state superintendent of public instruction. If enough teachers cannot be procured for all schools," Mr. Skidmore said, "pupils in remote areas may have to be sent to large centers to board and room, or lose their schooling for the year."

Camp Named Topaz . . .

DELTA—The Japanese relocation center at Abraham has been named Topaz by the U. S. postoffice department. The name was selected by Postmaster June W. Black of Delta, the camp being the closest town enroute to Topaz mountain.

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It's a good idea to mark your bags in some distinctive manner so you can identify them quickly at your destination.

S·P THE FRIENDLY SOUTHERN PACIFIC

Mines and Mining . . .

Carson City, Nevada . . .

Nevada's production of vital war materials could be increased by one-third if 2,000 skilled miners needed by the more than 600 mines operating throughout the state could be found, according to Matt Murphy, state mine inspector. One of the larger operations has found the shortage so acute that it has started a school for miners.

Phoenix, Arizona . . .

Special emphasis on war-time problems to aid Arizona miners, will be given by officials at the new office of Mineral Production Security divisions, U. S. Bureau of Mines, recently opened in Phoenix. Three mining engineers are included on the staff, Albert Kon selman, D. W. Jaquays and John Harmon.

Las Vegas, Nevada . . .

The first car of liquid chlorine, a by-product of Basic Magnesium, has been shipped from the company's plant to an eastern point. The company soon to be world's largest manufacturer of magnesium, will produce as a by-product the second largest volume of chlorine in the western hemisphere.

Now Available . . . COMPLETE VOLUMES OF DESERT MAGAZINES



We have a limited supply of COMPLETE VOLUMES of Desert Magazine now available. These are not new magazines but are mostly newsstand returns and are in good condition. Volumes and prices are listed below.

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THE DESERT MAGAZINE

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Lovelock, Nevada . . .

Rich ore is still being encountered on the 300-foot level at the 70-foot point of new development work in the east drift of the Buck and Charley mine at Lower Rochester, according to Kent Maher, superintendent. The ore vein is 12 feet wide, Mr. Maher said.

Washington, D. C. . .

To give relief to financially hard-pressed mine owners and to encourage mining of strategic nonferrous metals, the Senate Silver Committee has recommended special tax legislation. It suggested that in tax returns filed by mine owners there should be adequate allowance for return on capital, and that there should be no curtailment of such allowance as proposed by the treasury. It also urged that there should be no federal tax upon the proceeds of strategic mineral or metal mining operations until the capital investment is recovered.

Boulder City, Nevada . . .

Basic Magnesium, Inc., destined to be the world's greatest magnesium producer is already employing 13,618 workers although it has not yet reached peak production. This is 8,368 more than were carried on the Boulder dam payroll at peak production. At full capacity the plant will produce 30 times more magnesium than world production six years ago.

Indio, California . . .

The Southern Pacific has launched survey work to locate the 60-mile proposed ore railroad to open Eagle Mountain iron deposits northeast of Indio. Iron from the property, declared to be of almost inconceivable magnitude, will be shipped to Henry J. Kaiser's steel mill, Fontana, California. Following an investigation of iron deposits throughout the Southwest, the federal government authorized an expenditure of \$50,000,000 for Kaiser's plant and now is considering an appropriation of \$75,000,000 for expansion. The Eagle Mountain-Fontana project, first steel mining development west of the Rocky mountains, will accelerate full development of western mining. Upon completion of the Azusa, California, mill to be erected by the Pacific Coast Iron Corporation, ore from Eagle Mountain will also be shipped there. Proposed railroad construction entails several major engineering problems, most difficult of which is the grade up 1800 feet to Eagle Mountain from sea-level Coachella valley. Preliminary survey work is under direction of J. A. Gibbons, chief location engineer for the Southern Pacific. The company now is building a railroad yard at Fontana for the Kaiser plant. Development of Eagle Mountain property and other desert iron mines results directly from national defense needs, but federal officials point out that now and after the war manufacturing will develop west. Ship yards on the Pacific coast will be in a position to compete with eastern concerns, having access to steel supplies unhampered by long cross-country or water hauls.

Reno, Nevada . . .

Hardrock miners are needed for duty in Hawaii, federal civil service officials have announced here. Those employed will have full civil service rating with civil service benefits. Pay is \$1.25 per hour with time and a half for overtime. Pay starts at time the men embark from this country and all transportation expenses are paid from wherever the miner may be.

Bishop, California . . .

Ten and one-half miles of road to the H. A. Van Loon and J. E. Morhardt scheelite claims is being built by the federal government at a cost of \$50,000. About one mile of the road leading from McGee Creek resort, 40 miles northwest of Bishop, has already been completed.

Winnemucca, Nevada . . .

Nevada's top-ranking gold mine—The Getchell—has gone into production of tungsten now that its new 250-ton mill has been placed in operation. The Getchell is also producing arsenic, a poison used for gas and also for use against cotton boll weevils in the south. Thus Getchell is now aiding in production of gun cotton and cellulose as well as in the production of tungsten.

New York, N. Y. . .

Five factors determining whether mining lessees are to be considered employees or bona fide independent operators include: lessees must not work under a supervision of lessor as would indicate an employe-employer relation; the relationship is subject to special scrutiny where lessor furnishes all or most of the equipment; lessee must select, hire and fire his own employees; lessee must be free to dispose of his ore without undue disadvantage, and the lease must be for a definite period of not less than six months and not be arbitrarily cancellable by lessor in case of a lucky "strike," according to L. Metcalfe Walling, administrator of the wage-hour division of U. S. labor department.

Salt Lake City, Utah . . .

By next April, first units of the \$150,000,000 steel plant being erected by Columbia Steel Corporation at Geneva, Utah, will be in production, predicts E. M. Barber, vice-president of the company. Mr. Barber has established executive offices in Salt Lake City. Construction schedule, he said, calls for completion of first blast furnace about April, with others to be brought in at 30-day intervals.

Reno, Nevada . . .

In an effort to increase production of copper at the Rio Tinto mines, representatives of the war production board recently met here with operators and labor representatives to form labor-management committees. It is the intent of the federal men that owners and workers will share equitably in any increased production due to increased zeal on the part of the organization.

Kingman, Arizona . . .

Mines Development Company, headed by M. B. Dudley, president, and J. H. Hoffman, secretary, plans to reopen the old Copperville mine near here, it was announced late in August. The mine was located in 1907, but was later abandoned due to the low price of copper and the difficulty in mining and treating the ore. The vein varies from six to 25 feet in width and there are said to be 150,000 tons of ore in sight.

Gems and Minerals

This department of the Desert Magazine is reserved as a clearing house for gem and mineral collectors and their societies. Members of the "rock-hound" fraternity are invited to send in news of their field trips, exhibits, rare finds, or other information which will be of interest to collectors.

ARTHUR L. EATON, Editor

WIDE VARIETY OF GEMS IN NEW MEXICO AREA

A state-wide survey of areas yielding semi-precious stones or gems shows that New Mexico has one of the most prolific and widely divergent assortments in the western hemisphere.

M. L. Hurley, secretary of the Hot Springs chamber and managing director of the state chamber, states that local collectors of national repute vie with each other in displaying what are probably the most unique collections of semi-precious gems ever collected in this country.

The survey shows the following areas as containing commercial quantities of the gems listed:

Engle—sard, carnelian agate, jasper; Deming—moss agate; Upper Percha Creek—common opal; Upper Elephant Butte lake—flowered chalcedony, opalized petrified wood; Rincon—thunder eggs or nodules; Magdalena—smithsonite (green); Hatchita—moonsone; Kettle Top—peridot (green); Fort Baird—fire opal; Tyrone—turquoise.

Mr. Hurley states that gem hunting rivals gold panning in popularity.

FBI ON HUNT FOR SMUGGLED DIAMONDS

Shortly after the opening of war, it developed that FBI agents were quite familiar with a plot of the German high command to flood the American gem market with great numbers of diamonds stolen during the invasion of Holland and Belgium. U. S. treasury agents confiscated at a single time more than \$400,000 worth of illegally imported diamonds.

Werner von Clemm, cousin of the wife of Nazi foreign minister Joachim von Ribbentrop, was arrested along with other members of Pioneer Import corporation, of which von Clemm was president, and convicted of conspiracy for smuggling. The sentence carried a \$10,000 fine and two years in prison.

"Persons constituting the high command of the German army, members of the International Mortgage corporation, and persons constituting the diamond control office of the German army in Antwerp" were named as co-conspirators.

UTAH EDITOR VISITS FIELD OF SNOWFLAKE OBSIDIAN

Frank Beckwith, editor of the Chronicle at Delta, Utah, describes a recent field trip to a spot where he found "snowflake obsidian."

"It is mottled material," he explains, "looking exactly as if snow had fallen on the surface, leaving permanent white crystallized specks."

The material is found only in an area 200 yards square, in a valley 70 miles long and 50 miles wide, 50 miles south of Delta.

Along the way, at Coyote spring, they stopped at a point where 20 years ago Beckwith discovered the workshop of prehistoric Indians. Said Beckwith:

"The ancient Indian had gathered obsidian chunks at the deposits, two or three miles away, and there by water, had his little workshop; generations of them had so worked there,

and rejected pieces were strewn about in great profusion. Little piles (in places) testified that he had squatted on his haunches, and chipped, and chipped, letting the flakes he had removed fall in a pile, some as big as a dinner plate. The Indians had made so many arrowheads there, by water, that these piles were all around. (The water of the tiny reservoir now covers the spot.) It was a workshop, forge, foundry, or finishing plant, in ancient times, close to the source of supply."

Members of Sequoia mineral society met July 11 at the home of Oscar P. Noren, on Reed avenue, Reedley, to enjoy his wonderful collection of Indian artifacts, and old relics of early days in California, which he has housed in an attractive adobe building. The timbers of the adobe were part of an old stage depot brought by Noren from Leighton, California. He has a large collection of mortars, metates, manos, Indian beads and arrowheads. His brief talk on incidents connected with the collection of the relics in the neighborhood of his ranch was both amusing and interesting.

Mrs. Peggy Case, secretary of the Mineralogical society of Southern Nevada, writes that the society has suspended its meetings for the summer months, but will resume with the cooler weather in the fall. As most of the members have been working long hours in the defense plants at Las Vegas, the society cancelled all field trips as well as meetings for the summer.

Imperial Valley gem and mineral society is to resume its meetings early in September, after a vacation of two or three months during the summer.

Golden empire mineral society held its July meeting in Bidwell park, Chico, California, where a chow mein supper was served. Mrs. Lucile Fulcher, assistant librarian at Chico state college, and Miss Jennie Ross entertained the group with short addresses.

COLORFUL MINERALS

ORPIMENT-REALGAR

Most persons think of arsenic as a deadly poison, used by horticulturists and taxidermists in their fight against damaging insects. It is left for the mineral collector to discover that the two well known sulphides of arsenic, orpiment and realgar, are among the most colorful and striking of minerals. Realgar, AsS, the simple sulphide is gorgeous orange red in color. It is usually found massive, but Manhattan, Nevada, furnishes fine, monoclinic crystals. Nearly always associated with realgar is the other sulphide of the same element, orpiment, As₂S₃. Its monoclinic crystals much resemble realgar in brittleness and cleavage, but its color is quite distinct, lemon yellow. These two minerals are commonly found mixed together, the masses of orange red realgar and lemon yellow orpiment making a very pleasing and striking contrast. Care should be used in handling any arsenic ores, also these two should not be left exposed to sunshine or other bright light, as they have a tendency to fade rapidly and crumble to powder.

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AMONG THE ROCK HUNTERS

W. G. Clark, 1203 North Harrison street, Stockton, California, has recently been appointed secretary of the Stockton gem and mineral club, to succeed Marvin W. Brain, resigned.

Los Angeles mineralogical society held its July meeting in the picnic grounds of Clilao, James C. Arnold, president, presiding. The meeting was turned over to Leo Moir, field trip chairman, who talked on his new idea of collecting and studying Los Angeles county minerals. He showed a map covering the exact location of all the 47 minerals reported in Los Angeles county. This was passed around and it was decided to have prints made for each member of the society. To make it more interesting, a contest was proposed, with a prize for the best collection of these minerals.

Santa Monica gemological society has aroused much local interest and favorable comment with its exhibits in the main hall of the Santa Monica library. These exhibits have been appearing during the months of June, July and August. Informal meetings at the homes of members, and short trips in the immediate vicinity have been substituted for regular excursions. Guest speaker at the August meeting was Victor M. Arcenege, who gave a lively lecture on outstanding features of the geology of Southern California.

GEM MART

Adv. rate, 5c a word—Minimum \$1.00

\$2.50 brings you prepaid, six rare and beautiful crystallized Arizona minerals. Vanadinite, Dioptase, Wulfenite, Willemite, Linarite, Azurite. Specimens 1 1/2" x 2" or larger. Wiener Mineral Co., Box 509, Tucson, Arizona.

ZIRCON—OPALS—CAMEOS—3 Genuine diamond cut Zircons (total 2 1/2 carat) \$2.75. Twelve Genuine Opals \$1.50. Twelve Genuine Cameos \$2.50. B. Lowe, Box 311, St. Louis, Mo.

10 Tiny perfect Indian bird arrows of translucent chalcedony for a dollar bill. 100 ancient arrows \$3.00. List Free. Lear Howell, Glenwood, Arkansas.

Palm woods, jaspers, chalcedony, agate nodules and geodes, also polished and unpolished slabs, a few cabochons and other gem rocks. Valley Art Shoppe, 21108 Devonshire Blvd., Chatsworth, Calif.

AGATES, Jaspers, Opalized and Agatized woods, Thunder eggs, polka dot and other specimens. Three pound assortment \$1.50 postpaid. Glass floats, price list on request. Jay Ransom, Aberdeen, Wash.

100 GOOD GRADE Prehistoric Indian Arrowheads \$3.00. Mixed shapes and material. Ages old. List free. Lear Howell, Glenwood, Arkansas.

INDIAN RELICS, Beadwork, Coins, Minerals, Books, Old Buttons, Old Glass, Old West Photos, Weapons. Catalog 5c. Vernon Lemley, Osborne, Kansas.

200 JEWELRY STONES removed from rings, etc., assorted \$2.00. B. Lowe, Box 311, St. Louis, Mo.

Prize specimen in the gem collection of Albert L. Hubert of St. George, Utah, is a malachite crystal which he describes as 1 1/2 inches long and three-fourths inch thick. It is so well protected in the vug in which it occurred as to have a perfect natural polish. Hubert has picked up many fine petrified wood specimens in Utah.

It would be interesting to hear from various rock clubs about any games or other entertainment developed to take the place of field trips. Here is one used by Imperial Valley gem and mineral society. It might be called "Arm Chair field trip." Each member brings a specimen with which he is willing to part. Sevens, aces and kings are removed from each deck of cards to be used. Other cards are placed face up. One suit to a player. Shake two dice and turn down card indicated. (Double sixes for queen, double ones for deuces.) When a throw cannot be used next player takes dice. First to turn all cards wins. Players progress as in other games. Winner (others in order of lowest points left) has choice of specimens on his table, each move. Play stops and players progress as soon as any one succeeds in turning down all of his cards. When play is terminated each contestant keeps the specimen then in his possession.

Southwest Mineralogists of Los Angeles is to hold its annual mineral show at Harvard playground October 17-18. In deference to dimout regulations the hours will be one to five p. m. Saturday and ten to five Sunday. The club members were scheduled to be guests of Mr. and Mrs. Marion Speers at Western Trails museum in Huntington Beach September 6.

John Weldon, vice-president of Santa Maria rocks and minerals club, has found a new material near the mouth of Tequesquite canyon, 15 miles east of Santa Maria, which he has named "Tequesquite," from its location. Ernest Edwards, secretary of the club, writes that tequesquite is found in only one location as far as can be discovered. It lies in veins between shale, much of it being botryoidal on the top surface where the shale does not cover it. It is a rich brown material, about four to five in hardness. It fluoresces and phosphoresces under both black lamp and cold quartz light and shows a silver green fluorescence. It polishes readily and adapts itself to jewelry fashioning. The polished material is a very rich dark red-brown.

Major Wilfred Dresser of Fresno, California, member of Sequoia mineral society, also formerly a charter member of Imperial Valley gem and mineral society, has moved to 341 North Stoneman avenue, Alhambra. He is now connected with the U. S. Army recruiting station in Los Angeles.

Searles Lake gem and mineral society, during the month of October, is to sponsor a two-day hobby show. Outstanding exhibits by members of the organization and other hobbyists and a guest speaker from outside are to be events.

Northern California mineral society held a laboratory night, July 10 for its lapidaries, jewelry makers, micro-mount enthusiasts, blow pipe artists, etc. A feature of the meeting was a discussion on crystals, illustrated by numerous crystals of unusual interest, by president Soper. The monthly field trip went to the San Jose area for cutting material, crystals, pyrite, and fluorescent hydrocarbons.

W. Scott Lewis gave an educational lecture on Death Valley, illustrated by kodachrome slides, to San Fernando Valley mineral society, July 9. Fifty-eight persons attended.

Cogitations . . .

Of a Rockhound

By LOUISE EATON

• Some things is importanter than others. When war grips a country, trivialities is recognized as such, or completely forgot. Rockhounds is humbly thankful that they lives in a land where little things still counts; where it seems important an' wunderful that a thunder-egg don't turn out a dud, or that it don't rain on a field-trip day; where bird songs an' desert flowerz means a lot, an' where rockhounds can discuss grits an' laps, not powder an' guns, 'n where their hearts 'n souls ain't froze into cold knots uv fear inside uv 'em. God bless and keep America.

• Queer, ain't it, how peace uv mind is necessary for accomplishing eny wuk properly, whether th' wuk is did by hand or by head. There's no place to find peace like out on the desert under low-hangin' stars, or hikin' over rocky hills till bodily exhaustion crowds out mental unrest. Then important things stands out, an' what-makes-no-matter is recognized an' put into its place; worry fades away. After huntin' specimens for a day or 2 rockhounds can return to their tasks with clear heads an' calm hearts.

San Fernando Valley mineral society met August 8 at the home of junior past president, William D. Taylor, for an outdoors garden dinner for all members and their guests. The regular business meeting was held afterwards, followed by an auction of gem and mineral specimens, to raise money for the club treasury.

Dr. and Mrs. D. H. Clark, of Cypress circle, Redlands, California, acted as hosts to the Orange Belt mineralogical society on July 19. Forty-five members and friends partook of a covered dish supper. Howard Fletcher spoke on his recent trip to Colorado, and Dr. Clark on the petrification of wood. A feature of the evening was Dr. Clark's display of his magnificent collection of polished woods and mineral specimens.

The war department has announced that during the years 1942 and 1943 a net saving of more than 62,000,000 pounds of critical metals will be effected by the substitution of steel, silver and plastics for aluminum and tin in the manufacture of various ordinance items. The department said that 35,000,000 pounds of aluminum by the end of next year, the largest single saving, would be effected by using plastics for trench mortar fuses. All of these savings are to be effected, according to the government announcement, without allowing the use of substitutes to reduce the efficiency of the manufactured articles.

Almost 38,000,000 gross tons of iron ore, highest for the date since the association began keeping records, is reported by the Lake Superior iron ore association at iron furnaces and Lake Erie docks on August 1. At the current rate of consumption, these supplies are sufficient for more than five months' operation of the steel industry. During the year which ended August 1, the record total of almost 50,000,000 tons have been melted, compared with 43,000,000 tons for the like period last year.

The Orange Belt mineralogical society held its August meeting at Fairmont park, Riverside, the 16th. Forty-three members and friends met for a potluck supper. Members from Riverside acted as hosts and furnished material for a grab bag. Verne L. McMinn talked on lost and legendary gold mines, and his experiences in searching for some of them.

Geneva B. Dow, of Claremont, California, reports finding a fine piece of lapis lazuli in a wash near Claremont. The piece is brilliant blue, not large but of a quality which will cut into cabochons. It is probable the lapis washed down from the mine in the San Antonio canyon area, one of the few mines in North America that produce true lapis. She reports that it is difficult to get a permit to enter the mine. It is said that much of the good lapis has been removed to Pomona college for purposes of study and trade.

Long Beach mineralogical society met at the recreation park clubhouse on August 14. The program consisted of one speaker, a raffle, door prize and refreshments.

ROCKHOUN'S ON THE DESERT

(With compliments to the unknown homesteader from another homesteader)

By HARLAN D. ELLMAKER
Sacramento, California

Rockhoun's on the desert, an' the air is flowing free,
And there's miles of rocks around us, so let's load up, you an' me
Away from huffy cities where you have to grind and grieve.
We like the open spaces where a human soul can breathe.

Rockhoun's on the desert, here's agates red as wine,
An' it looks like all creation was set up for yours and mine.
No house to hamper vision, save a rancher's far away,
An' we'll camp wherever day ends, be it near or far I say.

Are we lost or lonesome? Well, see the jasper here!
'Twas put here just to please us, with colors made to cheer.
It's been waiting here for ages, through storm and summer sun,
An' it's ours just for the pickin' up, an' oh boy, ain't that fun!

Rockhoun's on the desert, bacon smell in sagebrush smoke,
You can't burn that wood Opal, put it in your gunny poke.
It's a shame that some dumb looter used a stick of powder there
And plundered all that Nature set in one stone forest rare.

Some say rocks ain't pretty, but all don't see the light
On fields of flaked obsidian when sun or moon beams bright.
There's rocks of every kind and hue, but do not get them mixt,
Or some of your'n will turn up when your neighbor's fixt.

Are we lonesome? Not a minute, 'cept when we're back in town,
And hanker for another prowl on deserts wide and brown.
Are we going back? Why, yes son, where the rocks are flowing free;
So crank up that ol' Lizzie, let's get going, you an' me!

COLLECTOR TELLS THE STORY OF TEKTITES

One of the most interesting subjects presented to the Klamath Mineral society at Klamath Falls, Oregon, during the past season was Mrs. Edith McLeod's discussion of Tektites, often mistaken for ordinary obsidian nodules.

"Tektites were first noted in 1787 in the river Moldau in Bohemia," Mrs. McLeod said, "and were locally called 'bottle stone' due to being glassy and green in color. In the scientific field these pebbles are known as Moldavites. Later they were found on the island of Billiton and called Billitonites, then they were discovered in Tasmania and called Darwin glass. In 1851 great numbers were picked up in Australia and were called Australites."

"In 1900, Dr. Suess, a German scientist, coined the word 'tektite' to take the place of the growing number of local names and to distinguish the group from volcanic glasses.

"The early scientists noted that the localities then known appeared to fall along the line of a great circle on the globe. This coincidence led many scientists to adopt the theory that the tektites came to the earth in a swarm as a shower of meteorites and as a consequence they were strewn across the face of the earth in a narrow band from Australia to Bohemia.

"Unfortunately for this assumption it has been proven that the ages of these glassy pebbles range over a period of many thousands of years, no two locations being of the same age. In addition to this it was discovered that no two locations had the same chemical composition. Finally other locations have come to light that were outside the limits that would be defined by a meteoric fall. Tektites have been found on the Gold coast of Africa and only recently they have been recognized on this continent in Texas.

"There are a number of theories that have never received much attention and these deal with the fusion of natural materials of the soil by such agencies as lightning, forest fires, burning coal seams, burning petroleum and gas seeps. These theories contain their objections in that tektites do not contain recognizable grains of rock or sand. Then there is the impact theory which suggests that they were formed by the impact of meteorites striking the earth, fusing the surface rock, and splashing it outward in droplets which solidify into the queer shapes in which tektites are found. In support of this theory is the fact that glass is actually found about large meteoric craters.

"The tektite is recognized chiefly from its flow structure which is usually visible from the exterior surface, this varies from straight (as in obsidian) through curved to highly

contorted. Selective etching along these fine flow lines makes them visible and in this one fact the tektite differs from obsidian which lacks this etching along the flow lines. On the surface of a piece there are often small conical pits. In a few the shape is similar to ones which would be produced by sticking a lead pencil point into a plastic mass.

"It has now been shown that tektites are very apt to occur in most any part of the country."

After holding informal sessions each month during the summer the Mineralogical Society of Arizona at Phoenix will resume regular meetings October 6. Visiting hobbyists are always welcome.

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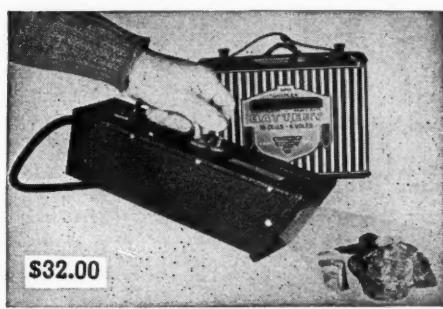
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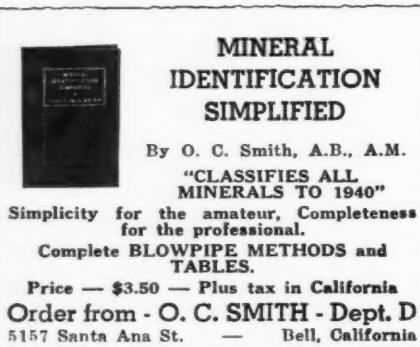
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and polishing equipment. Lelande Quick, who conducts this department, is former president of the Los Angeles Lapidary society. He will be glad to answer questions in connections with your lapidary work. Queries should be addressed to Desert Magazine, El Centro, California.

By LELANDE QUICK

There has been a lot of discussion lately among amateur lapidaries about jade and there is probably no gem material about which so much misinformation exists. There are two minerals, distinct in hardness, specific gravity, etc., known as jade. The varieties are correctly called Nephrite (silicate of magnesia) and Jadeite (silicate of alumina), and they should be so named in collections and not under the general term of Jade.

The word originally came from the Spanish "piedra de hijada" meaning "stone of the flank," as it was worn over the kidneys by the South American Indians for certain ailments. Nephrite is from the Latin word for kidney, just as the medical term nephritis denotes inflammation of the kidney. Therefore, to use the term "Nephrite Jade" is as superfluous as referring to a restaurant as a "coffee cafe." Jade always has a waxy feel and it is the only gem material that will produce musical sounds when struck.

The term Imperial Jade is for the emerald-green Jadeite, which is the finest. Jadeite is finer than Nephrite and both the Imperial and apple-green varieties are found only in Burma, never in China, where they are the favorites of gem artisans for their carvings. Jadeite's color varies from white to dark green and sometimes it is brown, red or mauve. It is harder than Nephrite (possibly a thousand times harder, or the estimated difference between 7 and 6 for the two types respectively) which is found in New Zealand, Turkestan and Russia. Neither Nephrite nor Jadeite has been found in situ in the Americas but now and then limited amounts of Nephrite are found as float, especially in Alaska. Kunz said that if Nephrite is ever found in place in the Americas it will probably be found in or near the Mexican state of Oaxaca where many prehistoric Nephrite ornaments have been found.

I am now cutting some Nephrite found as float in Wyoming that compares very favorably with some fine-quality Burma Jadeite that I have. It is rich apple green and is offered at a very reasonable price in Los Angeles. I was recently offered some supposedly "white Jade" at too high a price for my impatient and clumsy butchering. It was beautiful material but I was suspicious about its "being found in a secret location in the Mojave desert."

There is a lovely Idocrase, or Vesuvianite, found at several localities in California, principally at Happy Camp, called California and sold as Jade. It is pale green and is only 5 in hardness. The green color is copper staining and is usually patchy. I know that Chang, the great Chinese collector, bought many hundreds of pounds of it in Los Angeles at a dollar a pound and said he would get at least \$5 a pound for it at the carving shops in China. A friend of mine has found several pieces of pale Jade on California beaches which he has preserved in the rough.

Then there is the so-called "Indian Jade," which is Aventurine, or a pale-green quartz. This material cut in cabochon makes a fine ring stone in good taste for men. It is hard (7) and will take a lot of punishment but it is not Jade. There are many other misnomers, such as "Swiss Jade" (chrysoprase), "Korea Jade" (Serpentine), "Amazon Jade" (Microcline Feldspar), "Transvaal Jade" (Massive Grossular Garnet), etc.

This page of Desert Magazine is for those who have, or aspire to have, their own gem cutting equipment. Lelande Quick, who conducts this department, is former president of the Los Angeles Lapidary society. He will be glad to answer questions in connections with your lapidary work. Queries should be addressed to Desert Magazine, El Centro, California.

LAPIDARY HELPS AND HINTS . . .

Since the Chinese really "know how" when it comes to polishing Jade, why not follow their methods? They always use a lead lap and a leather buff. "Ruby dust," probably a fine garnet grit, is their favorite polishing agent and tripoli is also widely used. If you want to carve, rig up a bow with a fine wire and keep it charged with grit, acquire some ideas, an artistic sense, a million times more patience than you now possess, with a unique disregard for time and then in several months you can turn out a mouse or a goat, such as I purchased for \$5 each.

A quick and safe way to determine hardness of a stone is to mark it with an aluminum pencil. The fainter the mark the harder the stone, and you will not harm the tested piece. No aluminum mark can be made on a gem harder than 7.

Keep your felt and leather buffs away from grit and dirt. I cover mine with a rubber bathing cap (used to, rather) and then a paper sack. A friend of mine, whose polishing always wins prizes, "cleans" his wheels with sanding cloth! I don't recommend it.

Another friend of mine allows his grinding wheels to stand idle in water. "Don't you know they'll fly apart because they get heavy on one side? You'll get killed," I said one day. "Never heard of it," he said, "I think you're wrong." I hope I am.

The sealing wax developed for the American Railway Express Company's own use is the best dopping wax there is—if you can get some.

Use Oxalic acid as an aid in polishing softer materials, such as onyx. Pour the powder into water until no more will dissolve. This is termed "saturated" solution. Then add two more parts of water, pour on the surface to be polished and hand-rub vigorously with a heavy cloth or a piece of carpet. Follow with regular tin oxide technique and you'll have the high commercial polish you see on those pen stands in the stationery stores. Oxalic acid is poison; wash your hands if you eat with your fingers.

Tin oxide and acetone are practically un procurable without a priority number. Grits and grinding wheels also require a priority number except that grits and wheels in stock, not used in war industries, may be sold without a number but no more may be made for the duration. Most lapidary grits and wheels can still be secured but only as long as present stocks last. It would be wise to stock beyond your requirements while these things are still obtainable. This would not be unpatriotic hoarding as these things, with the exception of the acetone and tin oxide, are not needed in the war program.

Questions received too late for the Amateur Gem Collector's department this month will be answered on this page next month. Lapidaries desiring information should address their letters to Lelande Quick, c/o Desert Magazine, El Centro, California.

DID YOU KNOW . . .

- There is a greater variety of green gems than any other color? Yellow is next, closely followed by red and blue about equally.

NEW TOWN OF RIVERS BORN IN ARIZONA

Newest postoffice in Arizona is Rivers, the name given the newly constructed Japanese relocation center in the Gila river valley near Sacaton. Barracks are being erected to house 15,000 Japanese evacuees from the Pacific coast. They will farm 16,000 acres leased from the Gila River Indian reservation.

DAVIS DAM WORKERS TO RESIDE IN NEVADA

Campsite for workers on the new Davis dam project between Needles and Boulder dam, will be located on the Nevada side of the Colorado, the contractors have announced. Railhead for the project is Kingman, Arizona, and trestle bridges will be built across the river for workmen and materials.

IDENTIFICATION . . .

(Continued from page 25.)

- 7—In the Valley of Fire, Nevada. *Desert Magazine*, 1940.
- 8—Monument to Hadji Ali, famous camel driver of Lieut. Beale's camel train. This monument marks the grave in the cemetery at Ehrenberg, Arizona.
- 9—Along Arizona State Route 79 between Cottonwood and Flagstaff—on the road to Oak Creek canyon.
- 10—Erected by the chamber of commerce at St. Johns, Arizona.
- 11—This plaque is on a huge boulder at the head of Coyote canyon, California, and marks the spot where the Juan Bautista de Anza caravan emerged from the desert in 1776. *Desert Magazine*, September, 1941.
- 12—On the old Bradshaw stage road near Chuckwalla wells, California. *Desert Magazine*, December, 1937.
- 13—Marking the grave of the victim of a desert tragedy at Carrizo stage station, Butterfield route, in California. *Desert Magazine*, June, 1940.
- 14—At Tinajas Altas on the Camino del Diablo in southern Arizona. *Desert Magazine*, April, 1940.

SOMEWHERE IN UTAH Who can identify this picture?



PRIZE CONTEST ANNOUNCEMENT . . .

Somewhere in Utah, Nature carved out of solid rock the strange formation shown in the above photograph. It is in one of the most interesting scenic areas in the West—a place every *Desert Magazine* reader will want to visit sooner or later.

So that our readers may become more familiar with this odd-appearing labyrinth

of rock, *Desert Magazine* will award a prize of \$5.00 to the person sending in the identification, accompanied by the best 500-word descriptive article. The manuscript should give exact location, accessibility by highway, and any historical and geological data available.

Entries in the contest will remain open until October 20, and the decision of the judges together with the winning story will appear in the December issue of *Desert Magazine*.

Sez Hard Rock Shorty of Death Valley

By LON GARRISON

"Dude ranches is mighty interestin' business," commented Hard Rock Shorty after reading some of the ads in the travel section of a magazine. "Ride—see Glorious Calizonexico—fish—hunt—swim—hike! Yes sir—dude ranches sure sound interestin' in the advertisements. They don't never mention the blisters on yer feet—the meals yuh hafta eat standin' up from spankin' a saddle an' gettin' the

worst of it—the dust yuh eat along the trails, an' the grasshoppers in yer beans."

Hard Rock paused in his castigation of the great out-of-doors to think up more mean things to say. It didn't take him long.

"Yes sir—an' them guides! Their idea of a joke is to get some dude set down in a cactus an' then laugh their heads off. I visited one o' them places once—a feller there owed me some money. That mornin' they was all gettin' saddled up for a trail ride an' a fancy lookin' lady come out all dressed up like a Sears an' Sawbucks cowboy. She was purty as a little red wagon! One o' the guides led 'er over to a wormy lookin', hammer headed horse that was eatin' post hay an' gettin' sort o' tired of it the way he acted.

"The dude wrangler held the horse down while the lady climbed up on a rock an' crawled aboard. Then he gathered up the reins,

handed 'em to the lady an' run fer cover. Well—there really wasn't much to it—the horse give about two good hops, one stiff legged buck, an' the lady landed in the horse trough hollerin' like a pig caught in the fence. The horse busted through the gate an' lit out down the pasture.

"The foreman come runnin' over an' he was madder'n a bear with a cactus in his paw. He fished the lady out o' the tank, wrung 'er out a bit an' sent 'er back up to the house. Then he landed on the guide who was laughin' 'til his sides ached.

"You jug-head—you contemplated idiot—you hoorawed farm hand! What's the matter with yuh? You knowed that lady'd never been on a horse before!"

"'Sure,' gasps the guide. 'Sure—I knowed it. That's why I give 'er a horse that'd never been rode before either. I figgered they'd just as well start out an' learn together.'"

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El Centro, California



By RANDALL HENDERSON

WHEN news came from Washington that Secretary Ickes had authorized the harvesting of yucca from the public lands of the West, to provide a substitute for manila hemp, my reaction probably was the same as that of all conservation-minded Americans. I regretted that this step was necessary.

But nothing must stand in the way of our all-out war effort, and the robbing of the desert landscape of its exotic growth would be a small price to pay for victory.

Taking a realistic view of the situation, however, I can see no reason either to become very enthusiastic over the contribution that yucca will make toward winning the war, nor depressed because of the damage that will be done to the natural landscape by any harvest of the native yucca that grows on the mesas and hillsides.

Here is a story out of the past that will illustrate what I mean:

Many years ago, about the time I finished school and came to the desert to establish my home, a group of chemists made rather amazing disclosures regarding the commercial value of ocotillo. From its spiny stalks they had extracted juices and fibers with a wide variety of uses—ranging from wall-board to perfume. There were more than a score of by-products, all with a high commercial value. There wasn't an ounce of waste.

The report was so glowing that a group of investors put up \$70,000 to erect a mill in a little western Arizona town where ocotillo growth was especially prolific. When the machinery was all in place a crew of men was hired to go out and haul in ocotillo.

It took them only a few days to clean the landscape for miles around. The ocotillo forest that appeared so dense when viewed from the millsite, did not produce the tonnage that was anticipated. And when it became necessary to go long distances and gather the stalks from areas where the growth was sparse, and the terrain inaccessible to wagons, the mill starved to death for lack of raw material. Today only the concrete foundations remain as a monument to man's effort to denude the desert of its native growth.

I have a mortal fear of what souvenir manufacturers could do to the desert plant life if given an unlicensed opportunity. They would really devastate the landscape. But in any project where volume and tonnage are necessary—such as big-scale production of fiber from yucca would require—the desert will protect its own.

It is my opinion that agave eventually will prove to be a more feasible source of commercial fiber than yucca. Yucca grows very slowly, while agave spreads over the landscape and

produces a big tonnage of fiber in a comparatively short time. The Mexicans grow it in fields for the manufacture of mescal and tequila. If the time comes when Americans cultivate it for fiber, I hope American chemists will find a more useful outlet for the juice than the liquid dynamite produced by our neighbors south of the border.

* * *

Despite the curse of armed conflict, the world in which we dwell remains as it was created—a land of rich resources and for the most part, of kindly people—folks who are good parents and generous neighbors and staunch friends.

And in the Great American Desert where the peace and artistry of the landscape have scarce been disturbed, there are rare canyons of indescribable loveliness and winding trails that lead off toward a pastel horizon where beauty and charm are a healing tonic for troubled souls.

The world has seen armed conflict many times before. War lords have come and gone but they have never for long stayed the generous hand of a Providence which has decreed that greed and fear shall be vanquished by truth and courage.

We will win this war—and the sacrifices will not have been entirely in vain. It seems that we humans have to learn our lessons the hard way—but the truths we learn through bitter experience remain longer in our memories. I have faith that out of the agony of this period will come a new understanding—based on the creed that all men are not endowed by heredity and environment with the same fitness for survival, but that some have many talents and others few, and that peace and happiness may be brought to this earth only if the strong devote their extra abilities, not to material gain for themselves, but to strengthen the hands of those less fortunate.

We were all put on this earth together, the weak and the strong, the good and the bad, and as long as our goal takes the form of a mad scramble to see who can acquire the most riches, we will be in trouble.

Those idiots who tell me that if we take the money incentive out of the world the human race will decay, give me a pain. That kind of thinking is the primary cause of war.

* * *

And now that I have gotten that out of my system I want to mention the fact that out here on the desert summer is over, we are bringing out extra blankets for these cool nights, and if you can spare the rubber, an evening out under the desert stars is a grand antidote for the petty annoyances of these highly-gearred work days.

BOOKS

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NEW DIGNITY FOR THE AMERICAN INDIAN

Until about 1925, the Indian policy of the United States was predicated on the concept of a dying culture and a dying race. By warfare, disease, failure to breed and inter-marriage, it was thought, the Indian would become biologically extinct.

It was a mistaken concept. But during the long period when it prevailed, the administration of Indian affairs in this country was just about everything that it should not be. The story of that period, insofar as American Indians were concerned, is one of utter stupidity.

But among enlightened people all wrongs are corrected in time, and during the administrations of Coolidge and Hoover, and more particularly since Franklin Roosevelt, Harold Ickes and John Collier came into power, there has been a complete reversal of former policies.

Today, with their numbers steadily increasing and their problems better understood, the 400,000 Indians in the United States may look forward to the time not too far distant when they will be accorded the rights and opportunities—the dignity—that is the birthright of every American citizen.

It is about the transition now in progress that Oliver La Farge and 15 of the leading authorities on Indian life and affairs have written the book **THE CHANGING INDIAN**, published in August this year.

Indian Commissioner John Collier wrote the introductory chapter. Other contributors are Frank Lorimer, H. L. Shapiro, J. G. Townsend, Ralph M. Linton, John H. Pravinse, Ward Shepard, Allan G. Harper, Daniel F. R. de la Borrilla, Edward A. Kennard, Gordon MacGregor, Williard W. Beatty, Rene d'Harnoncourt, William Duncan Strong and David W. Clark. La Farge edited the material and wrote a critical summary of the views expressed by the contributors.

The text includes facts and conclusions bearing on health, land tenure, language and culture, education, leadership, crafts and religion. The book is in fact a concise presentation of the most enlightened thought now being applied to the solution of an age-old problem.

While the defects in our Indian program are still glaring, and baffling problems remain to be solved, the reader is impressed by the broad outlook of the men now devoting their thought and skill to the solution of these problems. It is a book for every sincere student of Indian culture in America.

Published by University of Oklahoma press, 174 pp, reading list and index. Illustrated with halftone photographs. \$2.00. —R.H.

ARIZONA'S PLANTLIFE HAS BEEN CATALOGUED

It is little wonder that Arizona's plants never before have been comprehensively contained within one volume—there are at least 3,500 of them! A good many of them never even had names before Dr. T. H. Kearney and R. H. Peebles decided 17 years ago to do something about the lack of a complete Arizona botany.

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This botanical dictionary is more than a systematic listing and description—much of it is made up of the experience and observation of

the authors (whose official work during these years was developing new varieties of cotton at Sacaton field station). They tell what the pioneers did with yuccas and Mormon tea, how the Indians used, and still use, mesquite gum, cactus buds, and "sand-food."

Besides observation and personal study, the authors have relied on botanists throughout the world for identification. About 42 percent of the book is contributed by these authorities. Scores of specimens which could not be identified have been described and named by Kearney and Peebles for the first time. One of these discoveries is an agave with bright golden blossoms, from the Rincon mountains, now known as *Agave chrysanthia*. \$2.00.

—Lucile Harris

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The illustrations by Harriet Morton Holmes are unusually good, and add both to the value and attractiveness of the book. 66 pages. \$1.00.

—Lucile Harris

ANSWERS TO TRUE OR FALSE

Questions on page 9.

- 1—False. Coyote is also a meat eater.
- 2—False. Mature saguaros are the tallest.
- 3—True. 4—True. 5—True.
- 6—False. De Anza followed Coyote canyon to the top of the range many miles south of San Gorgonio pass.
- 7—True.
- 8—False. Sidewinder derives its name from its manner of travel.
- 9—False. Arizona's buffalo herd is in Houserock valley.
- 10—True. 11—True. 12—True.
- 13—False. Only 21 of the original 29 palms are now standing.
- 14—True.
- 15—False. Copper is the main output of the Bingham canyon mines.
- 16—True.
- 17—False. The fruit is knocked from the cactus trunks with long poles.
- 18—False. Quartz seams often contain gold.
- 19—True. 20—True.

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